

**List of document required for obtaining the
Building completion certificate.**

- 1) Copy of approval from Nasik Municipal Corporation.**
- 2) Copy of approval from factory Inspector.**
- 3) No objection certificate of Maharashtra Prevention of water pollution board.**
- 4) Certificate of architect with copy of his valid license as architect.**
- 5) Certificate of plumber with copy of his valid license as plumber.**
- 6) Certificate of qualified Engineer regarding the soundness of structures.**

**Standarding of Building Bye-laws & Development
Control Rules in respect of
Municipal Councils in the State.**

**GOVERNMENT OF MAHARASHTRA
URBAN DEVELOPMENT AND PUBLIC HEALTH DEPTT.
Resolution No. T.P.S. 3678/814-B/UD-5
Mantralaya, Bombay-400 032.
Dated 16th July 1980**

RESOLUTION OF GOVERNMENT.

Under the Govt. Resolution, Urban Development & Public Health Deptt. No. MUO.3575/172/UD-19 dt. 10th January 1977, Govt. appointed a state level committee for preparing revised Buildings bye-laws generally on the National Building Code framed on the recommendations made by the conference of state Ministers of housing & Urban Development held at Madras. The scope of the Committees was further extended to enable it to consider revision of development control rules prepared under the provision of Maharashtra regional and town planning Act, 1966, and revision of building bye laws for Municipal Corporations under Govt. Resolution U.D. & P.H.D. No. MUG.3575/172/UD-19, dt. 25th Feb. 1977. This committee has submitted its report to Govt. suggestions three sets of standardized Building bye-laws and development control rules for (i) Municipal corporations, (ii) 'A' class municipal councils and (iii) for 'B' and 'C' class municipal councils. Govt. has examined these recommendations in consultations with Director of town planning and other authorities responsible for development in the state such as the Maharashtra housing and area development authority, the city and industrial development corporation of Maharashtra Ltd. the Maharashtra industrial development corporation etc. which were not resented on the committee. Govt. also received a few further suggestions from Municipal Commissioner Greater Bombay, Municipal Commissioner, Kolhapur Municipal Corporation and other after the committee had submitted its report. Govt. has taken into consideration the view of all the different authorities.

2. Govt. is pleased to accept and approve the recommendation made by the state level committee on incorporating the provision of National Building Code in building bye-laws for corporations and Municipal Council (vide Govt. has U.D. & P.H.D. Resolution No. MUG.-3576/172/UD-19, dt. 10th January 1977 and no. MUG.3576/172/UD-19, dated 25th Feb. 1977) subject to modifications which are mentioned in Annexure A & B appended to this resolution.
3. Govt. is pleased to direct that the recommendations made by the committee and approved by Govt. with modifications, which have been incorporated therein, should be of the Maharashtra Municipal Act, 1965 in suppression of model the provision of section 323 already prepared and published under Govt. Notification, U.D.P.H. & Housing Dept. No. BYM/1671/67907 - T, dated 2nd April 1974. All the municipal councils are hereby advised to adopt. These building byelaws in place of those already published as aforesaid.

All the municipal councils are directed under the provisions of the state of Maharashtra regional and town planning Act, 1966 to revise their existing development control Rules on the lines of the lines of the recommendations made by the committee & approving with modification mentioned in Annexure 'A' and 'B' appended to this resolution following the procedure proscribed under section 37 of the Maharashtra regional planning act, 1966 to submit the same for sanction of government unless their existing development control rules include a provision for authority replacing the present development control rules without the necessity of following procedure recorded u/s 37 of regional and town planning act 1966. The accompanying notification are published Maharashtra government gazette part-I-A central dt. 16.1.70

governor

By order and in the name of

**G.S.PANPBALEKUNDRI
UNDER SECRETARY TO GOVERNMENT**

The Director of Municipal Administration, Bombay
The Commissioners Bombay, Pune / Nagpur / Aurangabad divisions
The Chief Engineers Environment Engineering Organization and Joint Secretary, Urban Development and Public Health Department and Chairman of the State Level Committee on Standardization of Building Bye-Laws and Development Control Rules.

**URBAN DEVELOPMENT AND PUBLIC HEALTH DEPARTMENT
MANTRALAYA, MUMBAI – 400 032, DATED – 2ND NOVEMBER 1979**

MAHARASHTRA MUNICIPALITIES ACT, 1965

No. TPS. 3678/814-B-UD-5 (I) ... In exercise of the powers conferred by sub-section (1) of section 323 of Maharashtra Municipalities Act 1965 (Mah. XL of 1965) and all other powers enabling it in that behalf and in supersession of the provision Model Building By-laws made on the subject and published in Government Notification, Urban Development, Public Health and Housing Department, No. BYM 1671/67907-T, dated 2nd April 1974, the Government of Maharashtra hereby makes the following standardized Building Bye-laws and Development Control Rules namely :-
STANDARDIZE BUILDING BYE-LAWS AND DEVELOPMENT CONTROL RULES FOR 'A' CLASS MUNICIPAL COUNCILS OF MAHARASHTRA

Part 1 – ADMINISTRATION

1. Short Title, Extent and Commencement

1.1 These Bye-laws and rules shall be called “Building Bye-laws and Development Control Rules of ... Municipal Council, ... ** “

1.2 These Bye-laws and rules shall come in to force from ... / and these shall replace all existing building bye-laws and development control rules in force framed under Maharashtra Regional and Town Planning Act, 1966 or Maharashtra Municipalities Act 1965.

2. Applicability of the Bye-laws and Rules

2.1 In addition to the provisions contained in section 44, 45, 58 and 69 of Maharashtra Regional and Town Planning Act, 1966 and Section 183, 189, 190, 191 and 192 of Maharashtra Municipalities Act, the bye-laws and rules shall apply to the building regulation activity given under 2.2 to 2.3

2.2 The bye-laws and rules shall apply to all ‘development’ work. Further these shall apply to the various building operations under 2.2.1 to 2.2.4

2.2.1 Where a building is erected the bye-laws apply to the design and construction of the building.

2.2.2 Where the whole or any part of the building is removed, the bye-laws apply to all parts of the building whether removed or not.

2.2.3 Where the whole or any part of the building is demolished the bye-laws apply to any remaining part and to the work involved in demolition.

2.2.4 Where the occupancy of a building is changed, the bye-laws apply to all part of the building affected by the change.

2.3 Existing Building :- Nothing in the bye-law shall require the removal, alteration or abandonment, nor prevent continuous use of the occupancy of the existing building unless in the opinion of the Authority, such building is unsafe or constitutes hazard to the safety of the adjacent property or the occupants of the building itself.

3. Definition

3.0 General

- 3.0.1. In this by laws and rules, unless the contacts other wise requires, the definition given under 3.1 to 3.69 shall have the meaning indicated against each term.
- 3.0.2. Words and expression not defined in this by laws shall have the same meanings or sense as in the maharashtra regional and town planning act, 1966 and maharashtra municipalities act 1965

3.1. Act - shall mean -

(1) The maharashtra regional and town planning act, 1966(MAH.XXXVII OF 1966) AND

(2) The maharashtra municipalities act 1965(MAH.XL OF 1965)

As amended from time to time

- 3.2. **Accessory Building.** - A building separate from the main building on a plot and containing one or more rooms for accessory use such as servants quarter, garage, store rooms or such areas as may be classified by the director of town planning
- 3.3. **Accessory Use-** any use of the premises sub-ordinate to the principle use.
- 3.4. **Alteration** -. A change from one occupancy to another, or a structural change, such as and addition to the area of height, or the removal of part of a building, or any change to the structure, such as the construction of, cutting in to or removal of any wall, partition, column, beam, joist, floor or other support, or a change to or closing of any required means of ingress or egress or a change to the fixtures or equipment.
- 3.5. **Authority having jurisdiction.** - The authority which has been created by a statute and which for the purpose of administering the bye-laws, may authorize a committee or an official to act on its behalf; hereinafter called the 'Authority '
- 3.6. **Balcony.** - A horizontal cantilevered which projection including a handrail or balustrade to serve as passage or sitting out place.
- 3.7. **Basement or cellar** - The lower story of a building below or partly below ground level.
- 3.8. **Building.** -Any structure for whatsoever purpose and of whatsoever materials constructed and every part there of whether used as human habitation or not and include foundation, plinth, walls, floors, roofs, chimneys. Plumbing and building service, fix platforms, verandahs, balcony, cornice or projections, part of a building or anything a fixed there to or any wall inclosing or interned to include and land or space and sings and out door display structures. Tents, SHAMIANAHS and tarpaulins shelter, erected for temporary and ceremonial occasions with the permeations of the authority shall not be considered as a building
- 3.9. **Building height of.** - The vertical distance measured in the case of flat rooms, from the average level of ground around and continues to the building to the heights point of the building adjacent to the street walls and in the case of pitched roofs, up to the point where the external surface of the outer wall interests the finished surface of the slopping roof, and in the case of gaps facing the road, excluded for the purpose of taking heights
- 3.10. **Building Line.** - The line up to rich the plinths of a building adjoining a street or an extension of a street or a future street may law fully extend.
- Note - this term is synonymous with 'Set Back Line'.
- 3.11. **Built up Area.** - Any area covered with structure of any sort either with plinth or otherwise and which will fall within the definition of a building. The built of area shall not include certain space as given under by law no.15.62
- 3.12. **Chajja.** - A sloping or horizontal structural overhangs usually provided over openings on external walls to provide protection forms sun and rain.
- 3.13. **Combustible Material.** - A material, if tit burns or adds heat to a fire when tested for combustibility in accordance with is 3808-1966 method of test for combustibility of building materials.
- 3.14. **Courtyard or Chowk.** - A space permanently open to the sky enclosed fully or partly by buildings and may be at ground level or any other level with in all-adjacent to a building.
- 3.15. **Detached Building** - A building whose walls and roofs are indepidentent of any other building with open space on all sides as specified.
- 3.16. **Development** -"Development" with grammatical variations means the carrying out of buildings, engineering, mining or other operations in, or over, or under land or water, or the making of any material change, in any buildings, or land, or in the use of any building or land, and includes redevelopment and lay out and subdivision of any land, and "to develop" shall be construed accordingly.
- 3.17. **Drain.** - A line of pipes including all fitting and equipments such as manholes, inspection chambers, traps, gullies and floor traps used for the drainage of a building, or a number of building, or yards appurtenant to the buildings, within the same cartilage. Drain shall also include open channels used for conveying surface water.
- 3.18. **Enclosed Staircase.** - A staircase separated by fire resistance walls and doors from the rest of the buildings.

- 3.19. **Exit** - A passage, channel or means of egress from any buildings, stores or floor area to a street or other open space of safety.
- 3.19.1 **Vertical Exit**. - A vertical exit is mean of exit used for ascension or dissension between two or more levels including stairways smoke, proof towers, ramps, escalators and fire scopes.
- 3.19.2 **Horizontal Exit**. - A Horizontal exit is a protected opening through or around a firewall or abridges connecting two buildings. Enclosed fire resistive passage leading to a public way.
- 3.19.3 **Outside Exit**. - An outside exit is an exit from the building to public way, to an open area leading to public way or to and enclosed fire resisting passage leading to a public way connecting two buildings. Enclosed fire resistive passage leading to a public way.
- 3.20. **Fire And/Or Emergency Alarm System** - An arrangement of call points or detectors, sounders and other equipments for the transmission and indication of alarms signals, for testing of circuits and whenever required for the operation of an auxiliary services. This device may be workable automatically or manually to alert the occupants in the event of fire or other emergency.
- 3.21. **Fire Left** - One of the lifts specially designed for use by service personnel in the event of fire.
- 3.22. **Fire Proof Door** -A door or shutter fitted to a wall opening, and erected with the constructed and erected with the requirement to check the transmission of heat and fire for a specified period.
- 3.23. **Fire Resisting Material** - Material, which has certain degree of fire resistance.
- 3.23.1. **Fire Resisting**. - The time during which it fulfils its function of contributing to the fire safety of a building when subject to prescribed conditions of heat and load or restraint. The fire resistance test of structures shall be done in accordance with IS: 3809-1966. Fire resistance test of structures.
- 3.24. **Fire Separation** - The distance in meters measured from any other building on site, or from other site, or from other the opposite side of a street or other public space to the building.
- 3.25. **Fire Service Inlets** -A connection provided at the base of a building for pumping up water through in-built fire fighting arrangement by fire service pumps in accordance with the recommendations of the Fire Services Authority.
- 3.26. **Fire Tower** - An enclosed staircase which can only be approached from the various floors through landing or lobbies separate from both the floor areas and the staircase by fire-resisting doors, and open to the outer air.
- 3.27. **Floor** - The lower surface in a story on which one normally walks in a building. The general term "floor" unless otherwise specifically mentioned shall not refer to mezzanine floor.

NOTE. - Its relation to the determining entrance level shall determine the sequential numbering of floor. For floors at or wholly above ground level the lowest floor in the building with direct entrance from the road/street shall be termed as floor 1. The other floors above floor 1 shall be numbered in sequence as floor 2, floor 3, and etc. with number increasing upwards.

- 3.28. **Floor Area Ratio (F.A.R.)**. - The quotient obtained by diving the total covered area (plinth area) on all floors by the area of the plot:

$$\text{F.A.R.} = \frac{\text{Total covered area on all floors}}{\text{Plot area}}$$

Note. - The term, F.A.R. is synonymous with floors space index (F.S.I.)

- 3.29. **Footing**. - A foundation unit constructed in brickwork, masonry or concrete under the base of a Wall or column for the purpose of distributing the load over a large area.
- 3.30 **Foundation**. - That part of the structure which is in direct contact with and transmitting loads to the ground
- 3.31 **Garage**. - A building or portion there of use or intend to be use for the shelter or storage of any vehicle.
- 3.32 **Ground Level**. - The average level of ground in a plot. (Site).
- 3.33 **Group Housing Scheme**. - A housing scheme wherein dwelling houses are not constructed in separate individual plot, but where a group of buildings is proposed in one plot.
- 3.34 **Habitable Room**. -A room occupied or designed for occupancy by one or more persons for study, leaving, sleeping, eating, kitchen if it is use as living room, but not including bathrooms, water-closet compartments, launders serving and storage pantries corridors, cellars, attach and space that are not used frequently or during extend periods.
- 3.35 **Lying Out of New Street**. - Includes provision of road for formation, leveling, medalling or paving of road and footpaths etc.including lying of the service such as water supply, drainage etc.
- 3.36 **Lift**. - And appliance designed to transport persons for materials between two or more levels in a vertical or substantially vertical direction by means of guided car or platform.

- 3.37 Lift Machine.** - Part of the lift equipment compressing the motor (s) and control gear therewith, reduction gear (if any), break (s) and winding drums or shave, by which the lift car is raised or lowered.
- 3.38 Lift Well.** - Unobstructed space within an in closer provided for the vertical movement of lift car (s) and any counter-weight (S) including the lift peat and the spies for top clearance.
- 3.39 Loft.** - A intermediary floor between two floors or a residual space in a pitched roof, above normal floor level which is constructed or adopted for storage purposes
- 3.40 Masonry.** - An assemblage of masonry unites properly bounded together with mortar.
- 3.41 Means of Access.** - These shall include the road /street /vehicular access way, pathway up to the plots and to the building within a plot.
- 3.42 Mezzanine Floor.** - An intermediate floor, between two-floor levels above ground level.
- 3.43 Non-Combustible.** -A material, which does not burn nor add heat to a fire when tested for combustibility in accordance with good practice (see Bay-law No.3.13).
- 3.44 Occupancy or Use Group.** - The principal occupancy for which a building or a part of a building is used or intended to be used; for the purposes of classification of a building according to the occupancy, shall be deemed to include subsidiary occupancies which are contingent upon it. Buildings with mixed occupancies are those buildings in which more than one occupancy are present in different portions of the building.
The occupancy classification shall have the meaning given from 3.44.1.to 3.44.9. Unless otherwise spelt out in development plan.
- 3.44.1. Residential Building.** - These shall include any building in which sleeping accommodation is provided for normal residential purposes with or without cooking or dining or both facilities. It included one or two multi-family dwellings, lodging or rooming houses dormitories, apartment house and flats, residential hotels and private garages.
- 3.44.2. Educational Buildings.** - These shall included any buildings used for school, collage or day-care purposes for more than 8 hours per week involving assembly for instruction, education or recreation incidental to education buildings.
- 3.44.3 Institutional Buildings.** - These shall includes any building or part there of which is use for purpose such as medical or other treatment or care of persons suffering from physical or mental illness disease or infirmity, care of infants, convalescents or aged persons and for penal or corrector detentions in which the liberty of the in meets is restricted. Institutional buildings ordinarily provide slipping accommodation for the occupants. It includes hospitals, sanatoria, custodial institutions and panel institutions like jails, prisons, and mental hospitals reformatories.
- 3.44.4. Assembly Buildings.** -These shall include any building or part of a building where groups of people congregate or gather for amusement, recreation, social, religious, patriotic, civil, travel and similar purpose.; for example theaters, motion picture houses, assembly halls, city halls, town halls, auditoria, exhibition halls, any seems, mammal Karalee , gymnasium, reaustrant, places of worship, dance hall, club rooms, passenger station, and terminals of air, surface and other public transportation services , recreations piers and staid.
- 3.44.5 Business Building.** - These shall include any building or part of a building, which is use for transaction of business for the kipping of accounts and records for similar purpose. Doctors service facilities, court houses, records and reference libraries shall be classified in this group in so far as principal function of these is transaction of public business and the keeping of books and records.
- 3.44.6 Mercantile Buildings.** - - These shall include any building or part of a building, which is use as shops stores, market, for display, and sale of merchandise either wholesale or retail. Office, storage and service facilities incidental to the sale of merchandise and located in the same building shall be included under this gropes.
- 3.44.7 Industrial Buildings.** - These shall include any building or part of a building, or structure, in which products or materials all kinds and properties are fabricated, assembuilt or presses like assembly plants, laboratories, power plants, smoke houses, refineries gas plants, mills, dairies, factories etc.
- 3.44.8 Storage Buildings.** . - These shall include any building or part of a building, use primarily for the storage of sheltering of goods wares or merchandise, like ware houses, cold storage, fright depots, transit sheds, store houses, public garages, hangers, truck terminals, grain, elevators, barns and stable.
- 3.44.9 Hazardous Buildings.** - These shall include any building or part of a building, which is use for storage, handling manufacture of processing of highly combustibile of explosive materials or products which are liable to burn with extreme rapidity and /or which may produce poisonous fumes or explosion for storage, handling, manufacturing or processing which involve highly corrosive, toxic or noxious alkalis, acids or other liquids or chemicals producing flame, fumes and explosive mixture of dust or which results in the division of matter into fine particles subjects to spontaneous ignition
- 3.45. Open Space.** - An area, forming and integral part of the side, left open to the sky
- 3.46. Owner.** - The person who has legal title for land or building it also includes-----
a) An agent or trusty who receives the rent on behalf of the owner

- b) An agent or trusty who receives the rent of or is entrusted with or is concerned with any building devoted to religious or charitable purpose.
- c) A receiver, executor or administrator or a manager appointed by any court of competing jurisdiction to have the change of, or to exercise the rights of the owner; and
- d) A mortgage in possession

- 3.47. **Parapet** - A low wall or railing built along the edge of a roof or a floor
- 3.48. **Parking Space**. - An area enclosed or unenclosed, converted or open, sufficient in sizes to park vehicles, together with a driveway connecting thwacking space with a street or alley and permitting in grass and egress of the vehicles
- 3.49. **Planning Authority** . - The -----* Municipal councils or 'any' other authority thereafter constituted to control the development the area included with in the municipal limit.
- 3.50. **Plinth**. - The portion of a structure between the surface of the surrounding ground and surface of the floors, immediately above the ground.
- 3.51. **Porch**. - A covered surface supported on pillars or otherwise for the purpose of pedestrian or vehicular approach to a building.
- 3.52. **Rear**. - As applied to a building means that portion which is the side directly opposite in direction to the roadside.
- NOTE**. - In case of corner plots facing two roads, the road having the bigger width shall be considered as the frontage to decide the rear. In the case of roads of equal widths, the end of longer side shall be considered as rear
- 3.53. **Road/Street**. -Any highway, street lane, pathway, alley, stairway, passageway, carriageway, footway, square, place or bridge, whether a thoroughfare or not, over which the public have a right of passage or access or have passed and had access uninterruptedly for a specified period; whether existing or proposed in any scheme, and includes all bunds, channels, ditches, storm-water drains, culverts, sidewalks, traffic islands, roadside trees and hedges, retaining walls, fences, barriers and railing within the street lines.
- 3.54. **Road/Street Level or Grade**. - The officially established elevation or grade of the central line of the street upon which a plot fronts and if there is no officially established grade, the existing grade of the street at its mid-point.
- 3.55. **Road/Street line** - The line defining the side limits of a street.
- 3.56. **Room Height**. - The vertical distance measured from the finished floor surface to the finished ceiling/slab surface. The bottom (under side) of the beam or joists or tie beams shall determine the upper points of measurement for headroom's.
- 3.57. **Row Housing**. - A row of houses with only front, rear and interior open space.
- 3.58. **Semi-Detached Building**- a building detached on three sides with open space as specified.
- 3.59. **Site Or Plot**. - A parcel/piece of land enclosed by definite boundaries.
- 3.60. **Site, Corner**. - A site at the junctions of and fronting on two or more intersecting streets.
- 3.61. **Site, Depth of**. - The mean horizontal distance between the front and rear site boundaries.
- 3.62. **Site, Double Frontage**. - A site, having a frontage on two streets other than a corner plot.
- 3.63. **Site, Interior or Tandem**. - A site access to which is by a passage from a street whether such passage from part of the site or not.
- 3.64. **Smoke-Stop Door**. - A door for preventing or checking the spread of smoke from one area to another.
- 3.65. **Story**. - The portion of a building included between the surface of any floor and the floor next above it, or if there be no floor above it, then the space between any floor and the ceiling next above it.
- 3.66. **To Erect Means** -
- (a) To erect a new building on any site whether previously built upon or not ;
 - (b) To re-erect any building of which portions above the plinth level have been pulled down, burnt or destroyed; and
 - (c) Conversion from one occupancy to another.
- 3.67. **Travel Distance**. - The distance from the remotest point on a floor of a building to a place of safety be it a vertical exit, horizontal exit or an outside exit measured along the line of travel
- 3.68. **Unsafe Building**. - Unsafe building are those which are structurally unsafe, insanity or not Provided with adequate means of egress or which constitute a fire hazard or are otherwise dangerous to human life or which in relation to existing use constitute a hazard a safety or healthy or public welfare, by reason inadequate maintenance, dilapidation or abandonment
- 3.69. **Volume-to-Plot Ratio**. - The ratio of volume of building measured in cubic meters to the area of plot measured in square meters and expressed in meters.

3.70. Water Closet (W C). - A privy with arrangement for flushing the with water. It does not include a bathroom.

4. INTERPRETATION

4.1. In the bye-laws, the use of present tens includes the future tense, the masculine gender includes the feminine and the neutral the singular number includes the plural tense includes the singular. The word 'person' includes a corporation and an individual; writing includes printing and typing and 'signature' includes thumbs impression made by a person who cannot write if his name is written near to such thumb impression. The term 'bye-laws' and 'rules' shall be synonymous and hereinafter the term byelaws are used in the body of the document.

5. BUILDING PERMIT AND COMMENCEMENT CERTIFICATE REQUIRED

5.1. No. Person shall carry out any development work including development of land by laying out into suitable plots or development of any land as group housing scheme or erection, re-erection or making alteration or demolition of any building or causing the same to be done without first obtaining a separate building permit and commencement certificate for each such building from the authority.

5.1.1. No temporary construction shall be permitted, without obtaining prior approval of planning authority, which may be granted subject to such conditions as may be deemed necessary by the planning authority.

5.1.2. For construction of ground floor tenements with non-combustible material on plots not exceeding 50.sq. m. in site and service schemes on plinth constructed according to building regulations, the buildings permission may be waived.

5.2. In line with section 58 of Maharashtra regional and town planning act, 1966, when any government intends to carry out development of any land or carry building activity for the purpose of any of its department or officers or authorities, the officers in-charge there of shall inform in writing the authority the intention of government to do so, giving full particulars there of and accompanies by such document and plans as may be prescribed at least 30 days before undertaking such development.

5.2.1. The following operational construction of the government, whether temporary or permanent, which is necessary for the operation maintains, development or execution of any of the following services may be exempted from the purview of the byelaws: -

- (1) Railways
- (2) National Highways;
- (3) National Waterways;
- (4) Major Ports;
- (5) Airways and Aerodromes;
- (6) Posts and Telegraphs, telephones, wireless, broadcasting and other like forms of communication;
- (7) Regional grid for electricity; and
- (8) Any other services, which state government, may, if it is of opinion that the operation, maintenance, development or execution of such services is essential to the life of the community, by notification, declare to be services for the purpose of this clause

5.2.1.1. However the following construction of the government departments do not come under the preview of operational construction for the purpose of exemption under byelaws no.5.2.1; -

- (1) New residential building (other than gate lodges, quarters for limited essential operational staff and the like, roads and drains in railway colonies hospitals, clubs, institutes and schools, in the case of railways; and
- (2) A new building, new construction or new installation or any extension thereof, in the case of any other services

5.3. Pre-Code Building Permit. - If any building, permit for which had been issued before the commencement of the bye-laws, is not commenced within a period of one year from the date of issue of such permit and completed within the period of three years from the date of such permit after getting the commencement certificate or building permit duly revalidated after every year, the said permission shall be deemed to have lapsed and fresh permit shall be necessary to proceed further with the work in accordance with the provision of these bye-laws. In respect new permission in case of genuine bona feed hardship.

5.4. However, no permission shall be necessary the following works: -

- (1) The carrying out of works in compliance with any order or direction made by any authority under any law for the time being in force
- (2) The carrying out of works by any authority in exercise of its powers under any law for the time being in force;
- (3) For the carrying out by the central or the state government or any local authority of any works:

- (a) Required for the maintenance or improvement of a highway, road or public street, being works carried out on land within the boundaries of such highways, road or public street;
- (b) For the purpose of inspecting, repairing or renewing any drains, sewers, mains, pipes, cable, telephone or other apparatus including the breaking open of any other land for that purpose;
- (4) For the excavation (including wells) made in the ordinary course of agricultural operation;
- (5) For the construction of a road intended to give access to land solely for agricultural purpose;
- (6) For normal use of land which has been used temporarily for other purpose like marriage pandas or for festive occasions; and
- (7) In case of land, normally used for one purpose and occasionally used for any other purpose, for the use of land for that other purpose on occasions.

6. PROCEDURE FOR OBTAINING BUNIDING PERMIT AND COMMENCEMENT CERTIFICATE

6.1. Notice. - Every person who intends to carry out development works, erect, re-erect or make material alteration in any place in a building shall give notice in writing to the authority of said intention in the prided Performa given in appendix A and such notice shall be accompanied by plans and statements in sufficient copies (bye-laws no.6.1.1.) as required under bye laws no.6.2 to 6.3 The plans may be ordinary prints on Ferro paper or any other type. One set such plans shall be retained in the office of the Authority for record after the issue of permit or useful.

6.1.1. Copies of Plans And Statements. -Normally, four copies of plans and statements shall be made available a long with the notice in case of buildings schemes, where the clearance is required from other agencies like* fire service and other agues number of copies of plans required shall be as decided by the authority.

6.2. Information Accompanying Notice. - The notice shall be accompanied by the key (location) plan, site plan, sub-division layout plan **, building plan**, service plans, specification and certificate of supervision and ownership title as prescribed in 6.2.1.to 6.2.11

6.2.1. - Sizes Drawing Sheets and Coloring of Plans

6.2.1.1. - The sizes of drawing sheets shall be any of those specified in table first. --

TABLE 1
Drawing sheets sizes

Serial No.	Designation	Trimmed Size, mm
1	AQ	841x1,189
2	A1	594x841
3	A2	420x594
4	A3	297x420
5	A4	210x297
6	A5	148x210

6.2.1.2. -COLOURING NOTATIONS FOR PLANS. -The plans shall be colored as specified in table 2. Further the prints of plans shall be on one side of paper only.

6.2.1.3. - DIMENSIONS. -All dimensions shall be indicated in metric units.

**Table 2
Coloring of plans**

Sr.No.	Item	Site Plan			Building Plan		
		White Plan (3)	Blue Print (4)	Ammonia Print (5)	White Plan (6)	Blue Print (7)	Ammonia Print (8)
1	Plot Lines..	Thick Black	Thick Black ..	Thick Black ..	Thick Black ..	Thick Black ..	Thick Black
2	Existing street	Green	Green	Green	..	..	.....
3	Futures street if any	Green Doted	Green Doted	Green Doted..	.....	.....	.....
4	Prim sable Lines /Buildings	Thick Black Doted	Thick Black Doted	Thick Black Doted	.....	.....	.....
5	Open spaces			No. Color			
6	Existing work	Black (outline)	White	Blue	Black	White	Blue
7	Work proposed to be Demolished.	Yellow hatched	Yellow hatched	Yellow hatched	Yellow hatched	Yellow hatched	Yellow hatched
8	Proposed work	Red filled in	Red	Red	Red	Red	Red
9	Drainage and Sewerage work.	Red dotted	Red dotted	Red dotted	Red dotted	Red dotted	Red dotted
10	Water supply Work	Black dotted thin.	Black dotted thin.	Black dotted thin.	Black dotted thin.	Black dotted thin.	Black dotted thin.
11	Deviations	Red hatched	Red hatched	Red hatched	Red hatched	Red hatched	Red hatched
12	Recreation ground	Green wash	Green wash	Green wash	Green wash	Green wash	Green wash

* Name of City.

** Depending Applicability for permit for development work/ building work.

6.2.2. - Ownership Title. - Every application for a building permit and commencement certificate shall be accompanied by two copies of the following for verifying the proof of ownership:

- (1) Latest 7/12 extracts from the revenue department or the properties registered card. ; Or
- (2) Attested copy of original sale/ lease deed; and
- (3) Other documents acceptable to the authority

In case of lease hold plots the leases will be responsible to prove that he is entitled to constructed on the leasehold plots

6.2.3. - Key Plan (or Location Plan). - A key plan drawn to a scale of not less than 1: 8000 shall be submitted along with the application for building permit and commencement certificate showing the boundary location of site with respect to neighbor hoods landmarks.

6.2.4. Site Plan. -The site plan sent which an application for permit shall be drawn to a scale of not less than 1: 500 and shall show:

- (a) The boundaries, giving the dimensions of the site and of any contiguous land belonging to the owner thereof;
- (b) The position of the site in relation to neighboring street;
- (c) The name of the street (s) in which the building is proposed to be situated, if any
- (d) All existing buildings standing on, over or under the site;
- (e) The position of the building, and of all other buildings (if any) which the applicant intends to erect upon his continuous land referred to in (a) in relation to:-
 - (1) The boundaries of the site and in case where the site has been partitioned, the boundaries of the portion owned by the applicant and also of the portions owned by others;
 - (2) All adjacent street (s) buildings (with number of story and height) and premises within a distance of 12 m of the site and of the contiguous land (if any) referred to in (a); and
 - (3) If there is no street within a distance of 12 m of the site, the nearest existing street;
- (f) The means of access from the street to the building, and to all other building (if any) which the applicant intends to erect upon his contiguous land referred to in (a);
- (g) Space to be left about the building to secure a free circulation of air, admission of light and access for scavenging purpose;

- (h) The width of the street (if any) in front and of the street (if any) at the side or rear of the buildings;
- (i) The direction of north point relative to the plan of the building(s);
- (j) Any existing physical features, such as wells, drains, trees etc;
- (m) The ground area of the whole property and the break-up of covered area on each floor with the calculations for percentage covered in each floor in terms of the total area of the plot as required under bye laws governing the coverage of the area;
- (n) Overhead electric supply line, drainage and water supply line;
- (p) Such other particulars as may be prescribed by the authority.

6.2.5. Sub-Divisional Layout Plan. - In case of development work, the notice shall be accompanied by the sub-division layout plan, which shall be drawn on a scale of not less than 1:500 containing the following:

- (a) Scale used and north point;
- (b) The location of all proposed and existing roads with their existing/proposed widths within the land;
- (c) Dimensions of plots (s) along with building lines showing the dimensions of the setbacks, within each plot;
- (d) The location of drains, sewers, public facilities and services and electrical lines etc;
- (f) A statement indicating the total area of the site, area utilized under roads, open space, for parks, play-grounds, recreation spaces and development plan reservations, schools shopping and other public places along with their percentage with reference to the total area of the site proposed to be sub-divided.
- (g) In case of plots which are sub-divided in built-up areas in addition to the above, the means of access to the sub-division from existing street.

6.2.6 BUILDING PLAN. - The plans of the building and elevations and section accompanying the notice shall be drawn to a scale of not less than 1:100. The building plan shall: -

- (a) Include floor plans of all floors together with covered area clearly indicating the sizes of rooms and the position and which of staircases, ramps and other exit ways, lift wells, lift machine room and lift pit details. It shall also include ground floor plans as well as basement plans and shall indicate the details of parking space provided around and within building as also the access ways and the appurtenant open spaces with projections in dotted lines, distance from any building existing on the plot in figured dimensions along with accessory building
- (b) Show the use or occupancy of all parts of the building;
- (c) Show exact location of essential services for example, WC, sink, bath and the like;
- (d) Include sectional drawings showing clearly the sizes of the footings, thickness of basement wall, wall construction, size and spacing of framing members, floor slabs with their material. The section shall indicate the heights of buildings and rooms and also the height of the parapet; and the drainage and the slope of the roof. At least one section should be taken through the staircase provided further that the structural plan giving details of all structural elements and materials used along with structural calculations could be submitted separately but in any circumstance before the issue of the building permit/commencement certificate;
- (e) Give dimension of all doors, windows and ventilators;
- (f) Show all street elevations;
- (g) Indicate details of basket (served) privy, if any;
- (h) Give dimensions of the projected portions beyond the permissible building line;
- (i) Include terrace plan indicating the drainage and the slope of the roof;
- (j) Give indications of the north point relative to the plan; and
- (k) The Authority may prescribe such other particulars as.

6.2.6.1 BUILDING PLANS FOR MULTI-STOREYED/SPECIAL BUILDINGS. - For multi-storeyed building which more than 15 m height and for special buildings like assembly, institutional, industrial, storage and hazardous and mixed occupancies with any one of the aforesaid occupancies having area more than 500 sq.meters the following additional information shall be furnished/indicated in the building plan in addition to the items (a) to (k) of byelaws no.6.2.6. : -

- (a) Access to fire appliances/vehicles with details of vehicular turning circle and clear motor able access way around the building;
- (b) Size (width) of main and alternate staircase along with balcony approach, corridor, ventilated lobby approach;
- (c) Location and details of lift enclosures;
- (d) Location and size of fire lift;
- (e) Smoke stop lobby/door, where provided;

- (f) Refuse chutes, rules chamber, services duct etc;
- (g) Vehicular parking spaces;
- (h) Refuge area, if any;
- (i) Details of building services. - Air-conditioning system with position of fire dampers, mechanical ventilation system, electrical services, boilers, gas pipes etc;
- (j) Details of exists including provision of ramps etc for hospitals and special risks;
- (k) Location of generator, transformer and switch gear room;
- (l) Smoke exhauster system, if any;
- (m) Details of fire alarm system net work;
- (p) Location of centralized control, connecting all fire alarm system, built, in fire protection arrangement and public address system etc;
- (r) Location and dimensions of static water storage tank and pump room along with fire service inlet for wet-riser and water storage tank.
- (s) Location and details of fixed fire protections installations such as sprinklers, wet-risers, hose reels, drenchers, CO2 installations etc; and
- (t) Location and details of first aid fire fighting equipments/installations.

6.2.7. Service Plan. - Plans, elevations and section of private water supply, sewage and effluent disposal system and details of building service, where required by the authority, shall be made available on a scale not less than 1..100.

6.2.8 Specification. - General specification of the purpose constructions, giving type and grade of materials to be used in the from given in appendix A and schedule of doors and windows duly signed by licensed architect/ engineer/structural engineer/super wiser as case may be, shall a company the notice.

6.2.9. Supervision. - The notice shall be further a company by a certificate of a supervision in the prescribed from given in Appendix B, by the licensed architect/engineer/structural engineer /supervisor as the case may be.

6.2.10. Building Permit Fee. - The notice shall be a company by an attested copy of receipt of payment of building permit application fee.

6.2.11. Clearance Certificate for Tax Areas. - An attested copy of clearance certificate shall also accompany the notice from tax department of municipal council for payment of tax areas, where applicable.

6.3. Signing The Plans. - All the plans and statements regarding the purposed work shall be prepared by license Architect/Engineer/Structural Engineer/Supervisor as the case may be and shall be signed by the owner and licensed technical personal who shall indicate the name, address and license number allotted by the authority.

6.4. Building Permit Fee. - As one of the conditions under section 45(I) (II) of M. .R and T.P. ACT and section 338 of MM act, the building permit application fee shall be as prescribed below

(I) Sub-Division of land or Development Work _____

Area to be Developed	Rupees
----------------------	--------

1.Ha.	150
-------	-----

1.2-5 Ha.	300
-----------	-----

2.5-5Ha.	450
----------	-----

Above 5Ha.	150additional for every 5Ha.above Rs.450.
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(II) Residential Buildings-

Total covered area	Rupees
--------------------	--------

On all floors

Unto 60 sq. m.	10
----------------	----

Up to 150 sq.m.	50
-----------------	----

Above 150sq.m. And up to 300sq.m. Above 300sq.m. Charge Rs.10 for every 50 sq.m.above Rs.100 subject to a maximum of Rs.250

(III) Commercial (Mercantile), Business, Assembly, Hazardous and storage Buildings. (i.e. shops, show rooms, business officers, go downs, warehouses, banks, cinemas, theatres, clubs, etc.)

Total covered area	Rupees
--------------------	--------

150 sq m.	200
-----------	-----

For every additional 150 sq.m.or part thereof	100 additional for every 150sq.m.aboveRs.200subject To a maximum of Rs.1, 000
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Total covered area	Rupees
150sqm	25
More than 150 sq.m.	25 additional for every 150 sq.m. Above Rs.25 subject to a maximum Of Rs.100.

(V) Industrial Buildings

Total covered area	Rupees
150 sq.m.	200
Every additional 150 sq.m. Or part thereof	100 additional for every 150 sq.m. above Rs.200 subject to a Maximum of Rs.1, 000

(VI) Compound Wall. - It should be a minimum of Rs.5 for walls up to 100 running meters and further increase the fee on the same scale.

6.4.1. The fixation of these fees shall be governed by the following: -

- (a) For re-erection of existing buildings, the fees chargeable shall be the same as erection of new building.
- (b) For additions and alterations in the existing building, the fees shall be chargeable on the added/altered positions only, on the same scale as for new building.
- (c) For revised plan of a building which the authority has already sanctioned, the fees chargeable shall be 1/4 of the fees chargeable on the original plan, subject to the condition that the cover area of the building has not increased than in the original sanctioned plan.
- (d) In case of additions and alteration of buildings if the use of the building is also changed, than the chargeable fees shall be calculated on the use proposed.
- (e) In case of basements, for the purpose of calculating fee, the area covered under the basement shall be counted towards the covered area.
- (f) In the case of buildings with principal and subsidiary accompanes, in which the fees livable are different, than the fees for the total building scheme shall be calculated as per the rates for individual accompanes.
- (g) In the case of repetitive type of residential buildings, the building permit fees shall be calculated only for each type of the building **block/schem**, based on which the other building are constructed.

6.4.2. The owner may withdraw his applications and plans at any time prior to the sanction and such withdrawal shall terminate all proceeding with respect to such application; but the fees paid shall, in no case be refunded.

6.4.3 Charges for staking of building materials on public road. -The stacking of building materials and debris on public roads, highways shall be prohibited except with special permission of the authority. Where such permission has been granted, the licensed fee for depositing building materials and debris on public roads, highways etc. shall be as for as; -

- (a) For construction of residential buildings Rs. 5 per sq.m. Per week.
- (b) For construction of non -residential buildings Rs.10 per sq.m. Per week.

Note. - The stacking of materials would be permitted till the completion of the building. If after completion of the building, in the opinion of the authority, certain material have not been cleared or left in a stage causing annoyance or inconvenience, the authority shall take necessary actions against the owner and any cost incurred in the removal of such material, which has been carried out by the authority, shall be recovered from the owner.

6.5. Qualification and competence of the Licensed Architect/ Engineers/Structural Engineer/ Super wiser. - Architects, Engineers/Structural Engineer/ Super wiser referred to under 6.2.8., 6.2.9. And 6.3 shall be licensed by the authority as competent to do the various works as given in Appendix C. The qualifications and producer for licensing the architect, engineers, structural engineer and supervisor shall be as given in Appendix C.

6.6. Grant or Refusal of Permit

6.6.1. The authority may either sanction or refuse the plans and specifications or may sanction them with such modifications, conditions or directions as it may deem

necessary and thereupon shall communicate its decision to the person giving the notice in the prescribed form given in Appendix D and E.

- 6.6.1.1. In the case of proposals for development work, if in the opinion of the Authority, the layout of plots, or alignment of the street or access way is not adopted to or would detrimentally affect the layout or development of adjoining lands, the Authority shall require the applicant to alter the layout as deemed necessary. The details of laying of roads, of quality not less than 150mm. WBM road, laying of water supply drainage lines to meet the requirements of water supply and sewage effluent of the population to the level of the municipal mains, as decided by the authority, shall be furnished to the entire satisfaction of the authority, or the owner may deposit an amount equal to the expenses for such development, as estimated by the Authority.
- 6.6.1.2. The plans for buildings identified in byelaws No.6.2.6.1. Shall also be subject to the scrutiny of the competent fire authority as approved by the fire adviser of government of Maharashtra and the sanction through building permit shall be given by the authority after the clearance.
- 6.6.2. If within sixty (60) days of the receipt of the notice, under 6.1 of the byelaws, the authority fails to intimate in writing to the persons, who has given the notice, of its refusal or sanction, the notice with its plans and statements shall be deemed to have been sanctioned following the date of expiry of sixty days. Subject to the conditions mentioned in these byelaws, noticing shall be construed to authorize any person to do anything in contravention of or against the terms of lease or titles of the land or against any other regulations, byelaws or ordinance operating on the site of the work.
- 6.6.3. Once the plan has been scrutinized and objections have been pointed out, the owner giving notice shall generally modify the plan to comply with the objections raised and resubmit it. No new objections shall generally be raised when they are re-submitted after compliance or earlier objections. The authority shall scrutinize the re-submitted plan and if there be further objections, the plan shall be rejected.
- 6.6.4. Refusal or Sanction of Work by Government Departments**
- 6.6.4.1. Where a authority raised any objection to the proposed development on the ground that the development is not in conformity with the provisions either of any development plan under preparation, or of any building byelaws in force for the time being, or for any other material consideration, the officer shall-
- (I) Either make necessary modification in the proposals for development to meet the objections raised by the authority, or
 - (II) Submit the proposals for development together with objections raised by the authority to the state Government for decision.
- 6.6.4.2. The state Government, on receipt of the proposals for development together with the objections of the authority shall, in consultation with the Director of town planning, either approve the proposals with or without modifications or direct the officers to make such modifications in the proposals, as it considers necessary in the circumstance.
- 6.7. **Board of Appeals.** - A board of appeals shall be set up to give one more chance to the architect/engineer to defend their plans in case the same had been refused. The board of appeals shall consist of the town planning along with concerned divisional deputy director of town planning for the zone.
The architect/engineer shall appeal to this board within a period of thirty (30) days after refusal. The appeal shall be cleared within sixty (60) days of receipt of appeal.
- 6.8. **Duration of Sanction.** - In line with section 48 of Maharashtra regional and town planning Act 1966, the sanction once accorded through building permit shall remain valid for one year from the date of issue. The building permit shall be got revalidated before the expiry of this period. The request for further revalidation shall be subject to the development plan provision as also the building byelaws and the development control rules amended up to date. Such revalidation could be done for 2 consecutive terms of 1 year each after which proposals will have to be submitted to obtain building permit/commencement certificate afresh.
- 6.9. **Revocation of Permit.** - In addition to the provisions of section 51 of Maharashtra regional and town planning Act 1966 the authority may revoke any building permit issued under the provisions of byelaws, where there has been any false statement or any misrepresentation of material fact in the applications on which the building permit was based. In the case of revocation of permit based on false statement, misrepresentation of material fact in the applications, no compensation would be paid.
- 7. Procedure during Construction work**
- 7.1. Neither the granting of the permit nor the drawings and specifications, nor inspections made by the authority during erection of the building shall in any way relieve the owner of such building from full responsibility for carrying out the work in accordance with requirements of the byelaws.
- 7.1.1. The Authority shall have the power to carry out inspection of the work at various stages to ascertain whether the work is proceeding as per the provisions of byelaws and sanctions plan.

Section 333 of Maharashtra municipalities Act, 1965 shall apply for the procedure for inspections by the authority and for action to be taken by the authority arising out of the inspection carried out.

7.3. Documents at Site

7.3.1. Where test of any material are made to ensure conformity with the requirements of the byelaws, records of the test data shall be kept available for inspection during the construction of the building and for each a period thereafter as required by the authority.

7.3.2. The person to whom to permit is issued shall during construction keep available at site a certificate copy of approved drawing and specifications by licensed Technical Personnel/Planning Authority.

7.4. Checking of Plinth/Columns up to Plinth Level. - The owner shall give notice in prescribed form given in appendix G to the Authority after the completion of work up to plinth level with a view to enable the authority to ensure that the work is carried out in accordance with the sanctioned plans. The authority shall carry out inspection within seven days from the receipt of such notice and give them permission, for carrying out further construction work as per sanctioned plans in prescribed pro forma given in appendix H.

7.5. Deviation during Construction. - If during the construction of a building, any departure of a substantial nature from the sanctioned plan is intended to be made by way of internal alterations or external additions which violate any provision regarding general building requirements, structural stability and fire safety requirements of the byelaws, sanctions of the authority shall be obtained. The revised plan showing the deviations shall be submitted and the procedure laid down for the original plan heretofore shall apply to all such amended plans.

7.6. Completion Certificate. - The owner through the licensed architect, engineer, supervisor or group, as the case may be, who has supervised the construction, shall give notice to the authority regarding completion of work described in the building permit. The completion certificate shall be submitted in the proforma given in appendix J and shall be accompanied by two sets of completion plan, one of which shall be cloth mounted. The provision of completion certificate shall not apply to building construction work referred in byelaw No.5.1.2.

7.7. Occupancy Certificate. - The authority, on receipt of the completion certificate, shall inspect the work and sanction or refuse an occupancy certificate, in the proforma given in Appendix K within twenty-one (21) days from the date of receipt of completion certificate, after which period it shall be deemed to have been approved by the authority for occupation provided the building has been constructed as per the sanctioned plans, where the occupancy certificate is refused, the various reasons shall be rejecting at the first instance itself. At the time of issue of occupancy certificate the authority shall also ensure that temporary structures erected during construction stages are removed.

The provision of occupancy certificate shall not apply to building construction work referred in byelaw no.5.1.2.

7.7.1. Part Occupancy Certificate. - Upon the request of the holder of the building permit, the authority may issue a part-occupancy certificate for a building or part thereof, before completion of the entire work as per building permit provided sufficient precautionary measures are taken by the holder of the building permit to ensure public safety and health safety. Further the part of building for which part occupancy certificate is applied for, shall be complete and conform to all requirements of the byelaw.

The part occupancy certificate shall be given by authority subject to the owner indemnifying the authority on stamp paper of such value as decided by the authority

As per the Proforma given in appendix L.

7.7.2. In the case of buildings identified in by law no 6.2.6.1. , The work shall also be subject to the inspection by the competent fire authority as approved by fire advisor, govt. of Maharashtra and the occupancy certificate shall be issued by the authority only after the clearance regarding the completion of the work from the fire protection point of view.

8. Inspection -

8.1. Provision of by law no 7.1.1 shall apply for inspection.

9 Unsafe Building

9.1 All unsafe buildings shall be considered to constitute danger to public safety and hygiene and shall be restored by repairs, demolition or otherwise as directed by the authority. The provisions of section 195 of Maharashtra municipalities act, 1965 shall apply for the taking of actions to be taken by the authority on unsafe buildings.

10 Offences and penalties

10.1 Offence and Penalties. - Any person who contravenes any of the provisions of these byelaws or any requirements or obligations imposed on him by virtue of these byelaws including the maintenance of fire protection services or who interferes with or obstructs any person in the discharge of his duties shall be guilty of an offence and upon conviction shall -

- (a) Be punished by a fine as fixed by the authority and as stipulated in section 52 of Maharashtra regional and town planning further the authority shall -
 - (b) Take suitable actions including demolition of unauthorized works as decided by the authority; and
 - (c) Take suitable action against the licensed technical personal, which may include collection of the license and debarring him from further practice for a period up to 5 years.
11. Architectural control
- 11.1 For the buildings coming up in the important areas or fronting on major roads more than 18m in width or streets or in the case of important monumental buildings or in the proximity of buildings of historical importance, the buildings schemes may be clear from the architectural aesthetics point of view. The authority shall have powers to frame suitable rules for ensuring the above.
- For this the authority may seek the following information through detailed or models showing the exterior of the building indicating the details on the following; -
- (I) Projections, architraves on windows, doors and other openings, whether frames, sun-brakers, galleries, balconies, porches
 - (II) Exterior materials/ finishes used with texture
 - (III) Stairs rooms and such other constructions on the top of the building which affect the sky line; and
 - (iv) Details of gats and boundary walls

PART II- GENERAL BUILDINGS REQUIRMENT.

12. Requirements of Site

- 12.1 No piece of land shall be used as a site for the construction of building; -
- (a) If the authority considered that the site is in sanitary or that it is dangerous to contract a building on it.;
 - (b) If the site is with in a distance of 9m. Of the highest water mark, and if there be major water falls near by the distance of the plot from the same shall be 9m. From average high flood mark or 15m. From the defined boundary of water course which ever is more.;
 - (c) If the owner of the building has not shown to the satisfaction the authority all the measures required to safe guard the construction from constantly gating dam;
 - (d) If the buildings is for assembly use like cinemas and theater as well as for public worship, which has not been previously cleared by the authority.;
 - (e) If the building is proposed of any area filled up with car cases, excreta, filthy and offensive matter till the production of certificate from the healthy officer and municipal engineer to the effect that it is from the health and centering point of view, fit to be built upon;
 - (f) If the site is not drained properly or is incapable of being wealth drained;
 - (g) If the use of the shade site is for the purpose which in the opinion of the authority will be a source of annoyance to the health and comfort of the in hesitance of the neighbor hood.;
 - (h) If the plot has not been approved as a building site either by authority or City Improvement Trust Board or Planning Authority
 - (i) If the purpose occupancy of the building on the site does not conform to the land used proposal in the development plans or zoning regulations;
 - (j) If the buildings has to be constructed over/under a municipal drain/sewer line or water main or overhead transmission line.

- 12.2. Distances or site from electric lines.** - No. Verandah, balcony or the like shall be allowed to be erected or re-erected or any additions of alterations made to a building on a site with in distance quoted below in accordance with the current Indian electricity rules and its amendments from time to time between the building and overhead electric supply line: -

	Vertical	Horizontal
	m.	m.
(a) Low and medium voltage lines and services lines	2.5	1.2
(b) High voltage lines up to and including 33,000 v.	3.7	2.0
(c) Extra high voltage lines beyond 33,000v.	3.7	2.0

(Plus 0.3 m for (plus 0.3m for every additional 33,000v Or part thereof)

- 12.2.1.** The minimum clearance specified in clause 12.2 above shall be measured from maximum sag vertical clearance and from maximum delectation due to wind pressure for horizontal clearance.

13. Means of Access

- 13.1.** No building shall be erected so as to deprive any building of the means of access.

- 13.2.** Every person who erects a building shall not at any time erect or cause or permit to erect any building, which in any way encroaches upon or diminishes the area set apart as means of access.

13.3. The plot shall abut on a public means of access. Like street/road.

13.3.1. In case of building not abutting on a public means of access like street/roads etc., The buildings shall about on or have access from spaces directly connected from the street by a hard surface approach as given: -

(a) The which as such access ways in non-GAO than areas shall be as follows: -

(I) Min width of access ways	Max. Length of such access ways
6m	75m
9m	150m

(II) The approach to the building from the road/street/internal means of access shall be through paved pathway of which not less than 1.5 m provided its length is not more than 20m from the main/internal means of access.

(b) In GAO than areas in the case of plots facing street less than 4.5 m in which, plot boundary shall be shifted to be away by 2.25 m from the center line of the street to give rise to a new street width of 4.5m.

13.3.2. In the case of housing sachers for LIG and economically weaker section of society developed up to two storied row housing scheme, the pathway width shall be 3 m which shall not serve more than 50m and 8 plots on each side pathway.

13.3.3. Area under development work, layout or sub-division shall have suitable means of access from a development plan or town planning scheme road or any other road or from approved layouts of the adjoining lands. In cases, where the land in the interior does not have any existing access, the owner of such land shall have purchase strip of land required for access.

13.4. In case of special buildings identified on byelaws no.6.2.6.1. The following additional conditions for means of access to the plot and around building shall be ensured: -

(I) If there are any bends or curves on the approach road, a sufficient which shall be provided at the curve to enable the fire appliances to turn, the running circle begin at least of 10.0m radius.

(II) The approach to the building and open space on its all sides up to 6m width and the layout for the same shall be done in consolation with competent fire authority as approved by fire advisor to government of Maharashtra and the same shall be of hard surface capable of taking the weight of fire engine, weighing up to 18tonnes. The said open space shall be kept free of obstructions and shall be motor able.

(III) Main entrances to the plot shall be of adequate width to allow easy access to the fire engine and in no case it shall measure less than 4.5m. The entrance gate shall fold back against the compound wall of the premises, thus leaving the exterior access way within the plot free for movement of fire services vehicles. If main entrance at boundary wall is built-over the minimum clearance shall be 4.5m.

(IV) For multistoried group housing schemes on one plot, the approach road shall be minimum 9m in width and between individual buildings; there shall be a minimum space of 6m widths.

14. Rules for land sub-division or layout.

14.1. Roads/Street in land sub-division or layout.

14.1.1. Residential Areas. -

(I) Minimum with of layout roads or internal roads in sub-division proposal shall not be less than the following: -

Length of road	Minimum width
Up to 75m	.. 6.0 m.
Above 75m and up to 150m	.. 9.0 m.
Above 150m and up to 300m	.. 12.0m or as may be required by the authority but not exceeding 15m.
Above 300m	.. 15.0m or more as may be required by the authority in view of the projected traffic on importance of road.

(II) Cul-de-sacs giving access to plots and extending up to 150m normally and 275m maximum with an additional turning space at 150m be allowed only in residential areas, provided that cul-de-sacs would be permissible only on straight roads and further provided that cul-de-sacs end shall be higher in level than the of starting point of such dead end road. The turning space in which road shall be not less than 81sq.m. Area with a maximum width of 9m.

14.1.2. **Commercial and Industrial Areas.** - The minimum width of layout road or internal road in sub-division proposals shall not be less than the following: -

Length of road	Minimum width
----------------	---------------

Up to 75m	.. ..	.. 12m.
75 - 150 m	.. ..	.. 13.5m.
Above 150m	.. ..	15m. or more as may be required by projected traffic.

14.1.3. Intersection of Roads. - At junctions of roads the building off rounding off of intersection shall be done with tangent length from the point of intersection to the curve being $\frac{1}{2}$ the road width across the direction of tangent as given below: -

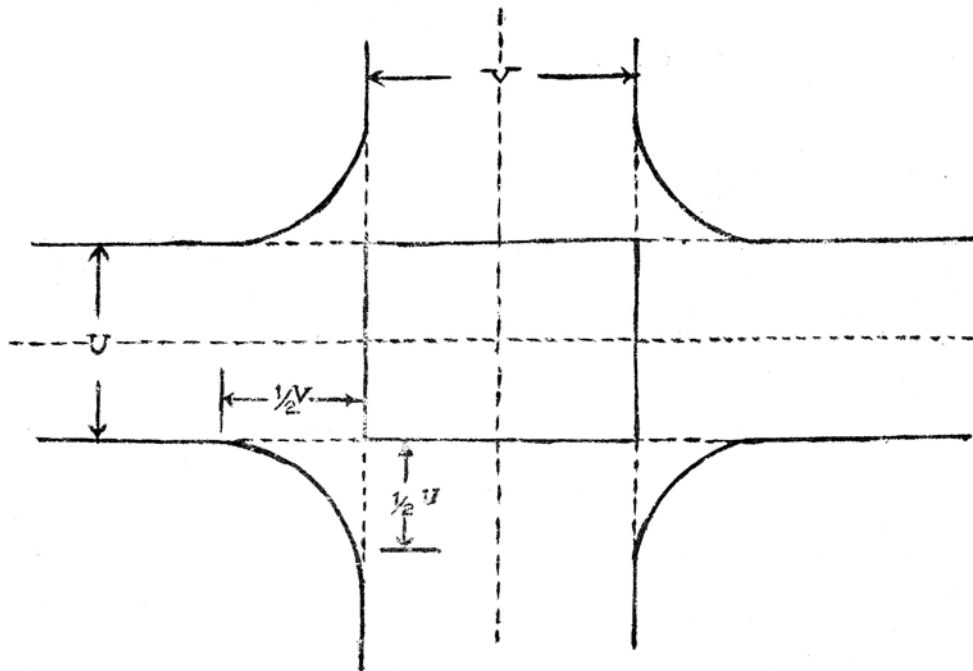


FIG. 1 ROUNDING OFF INTERSECTIONS AT JUNCTIONS

14.2. Open Spaces. - In any layout or sub-division of land admeasuring 0.4Ha. or more for residential purpose and 08.Ha. Or more for industrial purpose 10 per cent. Of the total area of land shall be reserved for open space, which shall as far as practicable be located in one central place. Out of such open spaces, an area to the extent of 10 per cent may be allowed to be constructed by a ground floor structure for the purpose of allied public use, such as kinder garnet, library, club hall, pavilion etc. location of such structure shall be in one corner of the open space.

14.3 Whenever called upon by the planning Authority to do so, under provision of section 183 of MM Act areas under road and open space in byelaws Nos. 14.1 and 14.2 shall be handed over to the planning authority after development of the same for which nominal amount (of Re.1) shall be paid by the planning authority. In case of the owners who undertake to develop the open spaces for bona fide reasons as recreational community open spaces, the authority may permit the tower to develop the open space unless the authority is convinced that there is miscue of development of open space in which case the authority shall takeover the land.

14.4. Layout of Plots.

14.4.1. Residential Buildings. - Subject to the limitation of urban land (ceiling and regulations) Act,....., the plot in residential area shall be laid out based on the following criteria: -

Plot Size	...	...	Development scheme
50sq.m to 100sq.m	...	...	Row Housing.
101sq.m to 150sq.m.	...	...	Semi-Detached Building.
Above 150sq.m.	...	...	Detached Building.

Note. - Plots, which are 4.5m to 7m. in width shall be developed as row housing schemes.

14.4.1.1. For housing scheme for low-income group and economically weaker section of society undertaken by public agencies, the minimum plot size shall be 30sq.m. With a minimum width of 3.5m

14.4.2. Other buildings. - In addition to the provisions of byelaws Nos.14.4.2.1 to 14.4.2.3. The minimum sizes of plots for buildings of other uses like business, educational, mercantile and industrial uses shall be as decided by the authority in consultation with the director of town planning.

14.4.2.1. Cinema Theaters/Assembly Halls. - Minimum size of plot for cinema theaters/assembly buildings shall be basis of seating capacity of the building at the rate of 3sq.m per seat.

14.4.2.2. Public Entertainment Hall/Mangle Karyalaya. - The minimum size of plot shall be 1,000 sq.m.

14.4.2.3. Petrol Filling Station. - The minimum size of plot shall be:-

(a) 30.50m x 16.75m in the case of petrol filling station with kiosk without service bay.

(b) 36.5 x 30.5m in the case of petrol filling station with service bay.

15. Development Control Rules

15.1. Land Use Classification. - The various land use classification shall be in the following zones: -

(I) Residential Zone	..	Purely residential (R1) Residential with shop lines at ground floor (R2)
(II) Agricultural producers marketing Committee zone.	..	
(III) Industrial zone	..	Services industrial zone (I1). Light and extensive industries. (I2) Heavy, large scale and obnoxious or hazardous industries. (I3)
(IV) No development zone	..	
(V) Special reservations	..	

The various occupancies and uses to be permitted in the various land use zones shall be as given in appendix M. Any other land uses not identified in appendix M or marginal changes may be permitted by the authority in consultation with the director of town planning.

15.2. Regulations for Gaothan and Similar Congested Areas as may be specified in the Development Plan.

15.2.1. General. - Area included in the go than shall be intended mainly for residential purpose excepting areas reserved for public purpose or municipal purpose in the development plan and areas in which it would be expedient to acquire for the said purposes, but not so designated. All other users as listed out under residential use in land use classification order, shall be permitted in the go than or similar congested areas.

15.2.2. Residential

15.2.2.1. Floor Area Ratio. - The permissible F.A.R. shall be 1.5 for purely residential buildings and in case of mixed residential and commercial or other user; additional F.A.R. to the extent of 0.5 for the non-residential user only shall be permissible.

15.2.2.2. Front Open Spaces. - The minimum set back from existing or proposed road shall be as under: -

(a) For streets 7.5m to less than 12.00 m in width 1.0m

(b) For streets 12.0m and above in width.. .. . 1.5m.

(c) For streets less than 7.5 m in width no set back shall be prescribed subject to condition that no lane shall be less than 4.5m in width clear of structural projections. For lanes less than 4.5m wide a set back of 2.25m shall be prescribed from the centerline of such lane. Streets less than 4.5m wide shall be treated as lanes only when they serve as access to the properties fronting on them. Where such streets, despite their narrowness, form part of traffic circulation system, widening shall be proposed and normal set back mentioned above shall be applied.

(c) Structural projections such as balconies, cornices, weather sheds, roof projections etc. shall be allowed in the set back distance prescribed above. Such projection will not be taken into consideration for calculation of built over area.

15.2.2.3. Lighting and Ventilation. - This shall be in accordance with provisions of byelaw no.17.14 subject to the provision of byelaw No 15.4

15.2.3. Other Building. -

15.2.3.1. Floor Area Ratio. - Maximum Floor Area Ratio shall be 2.0.

15.2.3.2. Built-up Area. - Maximum Built-up Area shall be 50 per cent of plot area.

15.2.3.3. Open Spaces. - A clear open space of 3 m all around the building shall be provided.

15.2.4. Further the provisions of 15.2.2. And 15.2.3. May be relaxed in consultation with the deputy director to town planning the concerned division, in special circumstances.

15.3 Regulation of Development Outside the Congested Area.

15.3.1. Residential Buildings.

15.3.1.1. The rules as given in able 3 shall apply for residential buildings, residential-cum-office or shop buildings permissible in non-go than areas and residential buildings permissible in industrial areas.

TABLE 3

Sr.No. (1) (8)	Category and road Width and Description of housing (2)	Minimum size of plot fronting on the road (3)	Minimum set back from the roadside (4)	Minimum marginal distance		Maximum built up area fraction of Plot area (7)	No. of story's (8)
				Rear (5)	Side (6)		
1	National highways, State highways. Major District roads.	450sq.m.	25m from the center Line of the road (Existing or proposed) Or 4.5m from the road Boundary whichever Is more.	4.5m	3.0m.	1/3	3
2	other roads 18m wide And above	450sq.m.	4.5m	4.5m	3.0m	1/3	3
3	Above 18m	above300sq.m.	4.5m	3.0m	2.25m	1/3	3
4	Below 18m	above 150sq.m	3.0m	1.5m	1.5m	1/2	2
5	Below 18m.	Above 100sq.m	3.0m	1.5m	1.5m	1/2	2
6	Row housing width below (And only below 12m)	above 50sq,m	2.25m	2.25m	nil	1/2	2
7	Row housing by public Agencies for low income Group and Economically Weaker section of society	30sq.m.	...	.....		3/4	
8	Group Housing scheme		5m from main Road 3mfrom Pathway	3.0m 3.0m	2.25m 3.m	1/3 (of the net plot area)	

Note 1. - For the sake of calculation of net area in-group housing scheme, area of plots less than 900 sq.m. shall treat as net plot area. In other cases, the net area shall be 3/4th of the total Plot area.

Note 2. - The distance between any two main buildings shall be 4.50m minimums up to ground and two floor constructions.

Note 3. - Where substandard plots have been either been granted or approved by government/planning authority prior or coming into operation of these development control rules -

(I) Plot admeasuring 50sq.m. In area and forming a compact block shall be governed y rules in byelaws no.15.2.

(II) If such substandard plots from pockets within area of large plots, the roadside setback shall be the same as in case of large plots and other provisions in byelaw no.15.2 shall apply.

(III) In case of substandard plots above 50-sq.m.in areas, whether authorized or unauthorized, provisions of serial Nos.1 to 6 of the above table shall apply.

Note 4. - In no case, the ribbon development rules shall be relaxed without approval of the highway authority.

15.3.1.2. Minimum distance between main and subsidiary building - A clear distance of at least 3.00 m shall be left between the main building and any subsidiary building such as an out-house, garage etc constructed in one building plot:

Provided that the main and the subsidiary building may be permitted to be connected by a covered corridor. Provided further that such subsidiary building shall be allowed to be constructed on the common boundary of two adjoining plots and in the rear of the plot without

leaving any marginal space from the boundaries. Such subsidiary structures shall be of ground floor construction only.

15.3.1.3. Number of main subsidiary buildings in a plot. - Only one main building either a tenement house or a block of flats or a dwelling house together with such outhouses, garages etc as are reasonably required for the bona fide use and enjoyment of the occupants of such main building and their domestic servants and which shall not be separately let out, shall be permitted to be erected in any plot. These provisions are not applicable to group housing schemes.

Provided that this restriction shall not prevent erection of two or more main buildings on the same plot, if the plot is up to thrice as the case may be (according to the number of buildings) or the minimum size of building plot as laid down under byelaw No.15.3.1. up to a plot admeasuring 900sq.m. In area.

15.3.2. Educational Buildings -

15.3.2.1. Built up Area. - The maximum permissible built-up area shall be not more than 1/3 rd of plot area.

15.3.2.2.F.A.R. - The maximum F.A.R. shall be 1.

15.3.2.3. There shall be a minimum open space of 6m on all sides.

15.3.3.4. No. Buildings shall be constructed if the distance between the perimeters of the site of proposed building and cinema theatre/assembly halls is less than 60m.

15.3.3. Institutional buildings (Hospitals, Maternity Homes, Health Centers)

15.3.3.1. Built-up Area. - The built-up area shall not be more than 1/3rd of the area of the plot.

15.3.3.2. F.A.R. - The maximum F.A.R. shall be 1.

15.3.3.3. There shall be a minimum open space of 6m on all sides.

15.3.3.4. No building shall be constructed if the distance between the perimeters of the site of the proposed building and cinema theatre assembly halls is less than 60m.

15.3.4. Cinema Theatres/Assembly Halls

15.3.4.1. Open Spaces:

(a) Front Set Back - A set back of 12m from road shall be left.

Note- Further in cases of plots facing National Highway, state and major district roads the building line shall be 37 m from the center line of existing or proposed road or 12m from plot boundary whichever is more.

(b) Side and Rear Open Space. - Side and rear marginal distance to be left open shall be 6m. The above shall be exclusive of parking spaces.

15.3.4.2. Access roads. - The plot of cinema theatre/assembly hall shall have a frontage on minimum 15m wide roads.

15.3.4.3. The minimum distance between boundary of the site for cinema theatre/assembly halls and boundary of educational of institutional and other government business buildings shall not be less than 60m.

15.3.5. Public Entertainment Hall/Mangle Karayalaya and like Buildings

15.3.5.1. Built-up area. - The maximum permissible built-up area shall be 1/3rd.

15.3.5.2. F.A.R. - Maximum F.A.R. shall be 1.

15.3.5.3. Access roads. - The minimum width of access roads shall be 15 m and plot shall abut on this road.

15.3.5.4. Open Spaces. -

(a) Front open space	...	...	...	12m.
(b) From all the three boundaries	...	...	...	6m.

15.3.6. Petrol Filling Stations with or without service Bays.

15.3.6.1. The plot on which a petrol filling station with or without services bays is proposed shall be independent plot on which no other structure shall be constructed.

15.3.6.2. Petrol station shall not be permitted within a distance of 91.5m.from any junction of roads.

15.3.6.3. Petrol station shall not be sited on the convex side of a road curve. In case the curve is not very sharp and moving out of the station are completely visible to the traffic from a distance of at least 91.5m. And vice-versa, a petrol station may be permitted on such a convex curve.

15.3.6.4. Petrol station shall not be sited within a distance of 91.5m from the nearest gate of a school, hospital, theatre, and place of assembly or stadium.

15.3.6.5. In case of kiosks and other buildings for sales offices, snack bars etc. within the plot for petrol filling stations, the set back from the boundaries shall be 4.5m. Further the other clearance for the installations shall be as per the petroleum rules of 1937.

15.3.7. Buildings in A.P.M.C. Zone.

15.3.7.1. Means of access. - When two or more buildings are constructed in the same plot, every building shall be provided with independent means of access of not less than 6m widths. The means of access shall not be considered as part of marginal open spaces required to be left around the buildings.

15.3.7.2. When land under development admeasures more than 0.4 ha. In area, minimum 10 per cent of the total area of land shall be reserved as open space; and such open space shall have proper means of access. Further in such cases either additional services passage of width not less than 6m. Shall be provided or the mercantile building shall be stilts so as to ensure that vehicles engaged in loading and unloading operations do not occupancy front streets.

15.3.7.3. Built-up area. - Maximum plot coverage shall be half of the plot size.

15.3.7.4. F.A.R. and V.P.R. - Maximum F.A.R. permissible shall be one. For the purpose of F.A.R., net area of land excluding open space, and areas covered by internal roads shall only be considered. Provided that in congested areas, F.A.R. may be permitted to be increased to 2.50 further the area and height limitations shall be subject to a maximum volume to plot ratio (VPR) of 4m.

15.3.7.5. Open spaces. - Marginal open spaces along periphery of land or plot shall be 4.5m. Minimum provided that in case of land/plots fronting on classified roads set back prescribed under ribbon development rules 4.5m. Whichever is more shall be observed.

Note. - The provisions of note under byelaw No.15.3.4. (a) Shall apply for front open space in the case of storage Buildings.

15.3.8. Industrial Buildings

15.3.8.1. Minimum size of plot, maximum built-up area, minimum marginal open spaces to be left in a plot, minimum open spaces to be left in a plot, minimum width of plot, maximum number of story's, and minimum parking space to be provided in a plot shall be as given in Table 4.

TABLE 4

Sr.No. No.Ofstory's	Plot size in sq.m.	Maximum Built-up Area percent	Min. Marginal opens spaces from all Sides, m.	Min. Width of plot, m.	Max.
1	2	3	4	5	6
1	200-500	25/50	2	12	2/1
2	501-1000	25/50	3	20	2/1
3	1001-2500	25/50	4.5	25	2/1
4	2501-5000	25/50	6	35	2/1
5	Above 5001	25/50	9	50	2/1

Note.1. - The provisions of the Note under byelaws no.15.3.4.1. (a) Shall apply for front open spaces given in column (4).

Note.2 - The maximum built up area and the maximum number of stores shall be so chosen to have a total built-up area of 50 per cent either as a single stored or a two-stored structure.

15.3.8.2 Means of Access. - Width of other internal roads, which serve the function of collector road or a higher function, shall be more than 12m. Depending upon function of the road.

When two or more buildings are constructed in the same plot every building shall be provided with independent means of access of no less than 6m. Inclusive of marginal distance.

15.3.8.3. When lands under development admeasure more than 0.4 Ha. In area. -

(I) Minimum 10 per cent of total area of land shall be reserved as open space. Such open space shall have a proper means of access and it shall be so located that it could be conveniently utilized. As such by persons working in the industry.

(II) Minimum 5 per cent of the total area of land shall be reserved as amenity space for amenities such as canteen, welfare centers, banks, hotels, post office, telephone exchange, fire stations, telex building, tea stalls, industrial hardware shops, transport offices, cycle repair shops, petrol pumps automobile repair shops, motor rewinding shops, dispensaries, hospitals, electric Sub-station, structures connected with water supply and drainage, housing for essential staff required for such services, welfare centers and recreation and recreation halls etc.

15.3.8.4. The industrial zone, actual factory or workshop building and storage or go down shall not be constructed within a distance of 23m.from the boundary of such zone where it separates an industrial zone from any other use, except a large open space; provided that such distance shall be measured from the opposite edge of the road where the zone abuts on existing or proposed road. Provided further that ancillary buildings such as essential staff quarters, canteen, garage, electricity stations, water tank etc; may be permitted in such distance of 23m.

15.4. Interior Open Space. - The whole of one side of one or more rooms intended for human habitation and abutting on either the front, rear or side open space for buildings in 15.3.2. To 15.3.8. Shall abut on an interior open space whose minimum widths shall be 3m. Subject to the provision of increasing the same as per provisions of byelaw 15.5.

15.5 Open Spaces and Height of Buildings. - For buildings identified in 15.3.2. To 15.3.8. which have taller than 10m the minimum open spaces shall be as given below in table 5, subject to the minimum specified in byelaw no.15.3.2.to 15.3.8.

TABLE 5
Open Spaces For Buildings Of Different Height

Serial No.	Height of Buildings	Exterior Open Spaces to be left out on rear and sides in each plot
	M.	M.
1.	10	3
2.	15	5
3.	18	6
4.	21	7
5.	24	8

15.6 Exemption to open spaces/covered area.

15.6.1. The following exemption to open spaces shall be permitted: -

- (a) Projections into open spaces. - Every open space provided either interior or exterior shall be kept free from any erection thereon and shall be open to the sky and no cornice, chhajja, roof or weather shade more than 0.75m. Wide shall overhang or project over the said open space so as to reduce the width to less than the minimum required.
- (b) A canopy or canopies each not exceeding 5.50 m. in length and 2.5m. in width in the front of cantilever or supported and unenclosed, over the main entrances providing a minimum clear height of 2.1 m below the canopy.
In one-storied residential buildings, only one such canopy shall be permitted for each individual detached block. In more than one-storied residential buildings, two canopies shall be permitted over ground floor/higher floor entrance.
- (c) A balcony or balconies at roof level of a width of 0.9 m. over hanging set backs within one's own land and courtyards and this shall be subject to a maximum of 1/3 length of permitted of building. To project in marginal open space of net less than 3m.in width.

15.6.2. In addition to byelaw nos. 15.6.1 (a), (b) and (c) the following shall not be included in covered area for F.A.R. and built-up area calculations: -

- (a) Manti (stair cover) over staircase on top floor.
- (b) Machine room for lift on top floor as required for the lift machine room installations.
Note. - the shaft provided for lift shall be taken for covered area calculations only on one floor.
- © Rocky, well and well structures, plant, nursery, water-pool, swimming pool (if uncovered), platform round a tree tank, fountain, bench, CHABUTRA with open top and unenclosed sides by walls, ramps, compound wall, gate, slide, steps outside building, domestic washing place, swing fire escape staircase, overhead water tank on top of buildings.
- (c) Drainage culvert, conduit, catch-pit, gully pit, chamber, gutter, culvert on municipal drains.
- (d) Basement floors used as parking spaces, storerooms, and air-conditioning plant room.
- (e) Electric sub-station or cabin, watchman's booths with maximum area of 1.6sq.m. And minimum width or diameter of 1.2 m. pump houses with maximum area of 10.sq.m. Minimum width or diameter of 3m.

15.7. Height Limit. - The height and number of stories shall be related to provisions of F.A.R. as given in bye-law nos. 15.2 and 5.3 and the provision of open spaces and following: -

- (a) The maximum height of building shall not exceeds 1.5 times the width of road abutting plus the front open spaces.
- (b) If a buildings abuts on two or more streets of different widths, the buildings shall be deemed to face upon the street that has the greater width and the height of the building shall be regulated by the width of the street and may be continued to this height to a depth of 24.m. along the narrower street subject to conformity of bye-law no.15.5.
- (c) For buildings in the vicinity of aerodromes, the maximum height of such buildings shall be subject to values framed by the civil aviation authorizes and provisions of table6.
- (d) Notwithstanding any earlier provisions, the absolute height of a building shall not be more than 24m.

15.7.1. Height Exemptions. - The following appurtenant structures shall not be included in the height of the building:

Roof tanks and their supports, ventilating, air-conditioning, lift rooms and similar services equipment, roof structures other than bursitis, stairs cover their chimneys and parapet wall and architectural features not exceeding 1m. in height.

Unless the aggregate area of such structures including bursitis, exceeds one-third of the roof of the building upon which they are erected.

TABLE 6
Aerodrome vicinity height restrictions

Sr. No.	Limits of distance from the aerodrome Reference point of buildings, Installations measured horizontally	Permissible height of building, structure or installation from Aerodrome reference point	Remarks
1	2	3	4
1	Between 7925 m. and 22000 m.	152m.	
2	Between 6706 m. and 7925 m.	122m.	
3	Between 5486 m. and 6706m.	91m.	
4	Between 4267m. and 5486 m.	61m.	
5	Between 3658 m. and 4267 m.	48m.	
6	Between 3048m. and 3658 m.	36m.	
7	Between 2438m. and 3048 m.	24m.	No. tree shall be planted within the limits of the distance indicated.
8	Between 1829m. And 2438m.	12.m.	
9	less than 1829m.	Nil, except with concurrence Of the local aerodrome authority	

Note 1. - Irrespective of their distance from the aerodrome, even beyond the 22 km. Limit from the aerodrome reference point, no radio masts or similar type of installations exceeding 152m.in height should be erected without the prior permission of the director general of civil aviation.

Note 2. - No buildings, structure or installation exceeding the height specified in Table shall be permitted without prior consultation with the concerned civil or military aerodrome authority.

Note 3. - The location of slaughter house/butcher houses and other area for activities like depositing of garbage dumps which would generate the collection highflying birds like eagles/hawks etc. shall not be permitted within a radius of 10km. From aerodrome reference point.

Note 4. - This table is applicable to civil airports and civil aerodromes other than international civil airports and their alternates.

16. Packing spaces -

16.1. Each off-street parking space provided for motor vehicles shall not be less than 20 sq. m. area, and scooters and cycles the parking spaces provided shall not be less than 3.sq. m. and 1.4sq. m.

16.2. For buildings of different occupancies, off-street space for vehicles shall be provided as stipulated below: -

(a) Motor Vehicles. - Space shall be provided as specified in table 7 for parking motor vehicles.

(b) Other types of vehicles. - For non-residential and non-assembly occupancies in addition to the parking areas provided under bye law no.16.3 (a) above 100, per cent additional parking space shall be provided for parking other of vehicles. Of this, a minimum of 60 per cent shall be set apart exclusively for cycles.

TABLE 7
Off-street parking spaces

Sr. No.	Occupancy	One parking space for every
1	Residential - (I) Multi-family residential (II) Lodging establishments, tourist and Hotels, with lodging accommodation.	(a) 2 tenements having carpet areas 101 to 200sq. m. (b) 1 tenements exceeding 201sq. m. carpet area. 6 guest Rooms.
2.	Educational* 100sq. m. carpet area or fraction thereof	the administrative office area and public services areas.
3.	Institutional (medical)	20 beds. Beside the above, one ambulance parking space
	admeasuring strength	10m x 4m shall be provided for hospital having bed Of 100 or above.
4.	Assembly	40 seats.
5.	Government or semi-public or private business	100sq.m. Carpet area of fraction thereof.
6.	Mercantile	100sq.m. Carpet area of fraction thereof.
7.	Industrial**	200sq.m. Carpet area or fraction thereof
8.	Storage	300sq.m. Or part thereof.

*In the case of auditoria for educational buildings, parking space shall be provided as per sr.no.4.

** For plots up to 100sq.m. As in the case of shops, parking spaces need not be insisted on.

16.3. Off-street parking spaces shall be provided with adequate vehicular access to a street; and the area of drives, aisles and such other prohibitions required for adequate maneuvering of vehicles shall be exclusive of the parking spaces stipulated in these rules.

16.4. If the total parking space required by these rules is provided by a group of property owners for their mutual bonfires, such use of this space may be construed as meeting the off-street parking requirements under these rules, subject to the approval of the authority.

16.5. In addition to the parking spaces provided, for buildings of mercantile (commercial), industrial and storage at the rate of one such space of 3.5m x 7.5m. For loading and unloading activities for each 1000sq.m. of floor area or fraction thereof may be provided.

16.6. Parking lock-up garages shall be included in the calculation for floor space for F.A.R. calculations unless they are provided in the basement of building, or under a building constructed on stilts with no external wall.

16.7. The parking space in cinemas, theatres, places of public assembly shall be provided as under: -

Sr. no.	Type of Vehicle	No. of vehicles for which parking space shall be provided
1.	Cars	2.5%
2.	Scooters, motor cycles, two wheelers	10% of the seating capacity.
3.	Cycles	2.5%

*See serial No. (4) of table 7.

16.8. The spaces to be left out for parking as given in byelaw no.16.1 to 16.7 shall be in addition to the open spaces left out for lighting and ventilation purpose as given in byelaw no. 15.2 to 15.7 excepting that 50 per cent of the open spaces required under byelaw no.15.2 to 15.7. Around buildings may be allowed to be utilized for parking, loading or unloading spaces, provided than minimum distance of 3.6.m around side and rear and 6m. At front shall be kept free of any parking, loading! Unloading spaces.

16.9. Parking spaces shall be paved and clearly marked for different types of vehicles.

16.10. In the case of parking spaces provided in basements, at least two ramps of adequate width and slope (see byelaw no.19) shall be provided located preferably at opposite ends

17. Requirement of parts of Buildings -

17.1. Plinth.

17.1.1. Main Buildings. - The plinth or any part of a building or outhouse shall be also located with respect to surrounding ground level as well as average normal flood level/water mark so that adequate drainage of the site is assured but not at a height less than 45cm. For housing for Economically weaker section of society and low income group the plinth may be 30 cm.

17.1.2. Interior Courtyards. - Every interior courtyard shall be raised at least 15 cm. above the level of the center of the center of the nearest street and shall be satisfactorily drained.

17.2 Habitable Rooms.

17.2.1. Size. - No habitable room shall have a floor area of less than 9.5sq.m. Except those in hostels attached to recognize educational institutions, the minimum size of a habitable room for the residence of a single person shall be 7.5sq.m. The minimum width of a habitable room shall be 2.4m. Where there are two rooms, one shall be not less than 9.5m, and other 7.5m

17.2.1.1. In the case of special housing schemes put by public agencies for low-income group and economically weaker section of society, the size of a single room tenement shall be 11sq.m.

17.2.2. Height. - The height of all rooms for human habitation shall not be less than 2.75m. Measured from the surface of the floor to the lowest point of the ceiling (bottom of slab). In the case of centrally air-conditioned building, of the habitable room shall not be less than 2.4m. Measured from the surface of the floor to the underside of the slab or to the underside of the false ceiling. The minimum clear headroom under beam shall be 2.4m.

17.2.2.1. In the case of pitched roof, the average height shall not be less than 2.75m. And the minimum height of eaves level shall not be less than 2.2 m.

17.3. Kitchen.

17.3.1. Size. - The area of the kitchen shall to be less than 5.5.sq.m. With a minimum width of 1.8m. A kitchen, which is also intended for use as a dining room, shall have a floor area not less than 9.5sq.m. With a minimum width of 2.4m.

17.3.1.1. In the case of special housing scheme under byelaw no.17.2.1.1. In single room tenement on provision for kitchen is necessary in the case of two room tenements the size of kitchen shall be 4.0.sq.m. With a minimum width of 1.5m.

17.3.2. Height. - The room height of a kitchen measured from the surface of the floor, the lowest point in the ceiling (bottom of slab) shall not be less than 2.75m.

17.3.2.1. The provisions of 17.2..2.1. Shall apply for pitched roof.

17.3.3. Other requirements. - Every room to be used as kitchen shall have-

- (a) Unless separately provided in a pantry, means for the washing of kitchen utensils which shall lead directly or through a sink to a grated and trapped connection to the waste pipe;
- (b) An impermeable floor;
- (c) A chimney not less than 500sq.m. in area after par getting if fire wood, coal or like materials is used which will generate smoke; and
- (d) Window of not less than 1sq.m.in area, opening directly into an interior or exterior space, but not into a shaft (see byelaw no.17.14.3.)

17.4. Bath Rooms and Water Closets.

17.4.1. Size. - The size of bathrooms shall be not less than 1.8sq.m. With a minimum width of 1.2.m. The minimum size of water closets shall be 1.1sq.m. With a minimum width of 0.9m. If it is a combined bathroom and water closets, the minimum area shall be 2.8sq.m. With a minimum side of 1.2.m.

17.4.1.1. In the case of special housing scheme under byelaw No. 17.2.1.1. The sizes of bathroom's water closets shall be as follows: -

- | | |
|-----------------------------|--|
| (a) Independent w. c. | 1.0x0.9m. |
| (b) Independent baths | 1.2x1.1m. |
| (c) Combined bath and w. c. | 2.0.sq.m. with a minimum side of 1.1.m |

17.4.2. Height. - The height of a bathroom or water closet measured from surface of the lowest point in the ceiling (bottom of slab) shall not be less than 2.2.m.

17.4.3. Other requirements. - Every bathroom or water closets shall: -

- (a) Be so situated that at least one its walls shall open to external air. The size of the opening on the wall shall not be less than 0.3sq.m. with minimum side of 0.3.m. This could be in the form of ventilator, window or louses. (See byelaw no.17.13.3.)
- (b) Not be directly over any room other than another latrine, washing place, bath or terrace, unless it has a water-tight floor;
- (c) Have the platform or seat made of water-tight non-absorbent material;
- (d) Be enclosed by walls or partitions and the surface of every such wall or partitions shall finished with a smooth impervious material to a height of not less than 1.m. above the floor of such a room; and
- (e) Be provided with impervious floor coverings; sloping towards the drain with a suitable grade and not towards verandah or any other room.

17.4.4. No room containing water closets shall be used for any purpose except, as a lavatory and no such room shall open directly into any kitchen or cooking space by a door, window or other opening. Every room containing water closets shall have a door completion closing the entrance to it.

17.5. Loft. - The maximum height of a loft shall be 1.5.m. and the loft may be provided over residential kitchens, bathrooms, corridor and over show floors, built up to an area 25 per cent over kitchen and full space of bath rooms, water and corridor. In shops, with a width up to 3m. Lofts up to 33 1/3 per cent of the covered area may be provided. In shops with widths above 3m. Lofts up to 50 per cent of the covered area may be provided. The headroom under the loft shall not be less than 2.2.m. The loft in industrial units commercial shop shall be located 2m. Away from the entrance.

17.6. Ledge or Tend.

17.6.1. Size. - A ledge or tend in a habitable room shall not cover more than 25 per cent of the area of the floor on which it is constructed and shall not interfere with the ventilation of the room under any circumstances.

17.6.2. Height. - The ledge shall be provided at a minimum height of 2.2.m.

17.7 Mezzanine Floor.

17.7.1. Size. - The aggregate area of the mezzanine floor shall not exceed 33 1/3 per cent of the built up area of that floor. The minimum size of mezzanine floor its is used as a living room shall room not be less than 9.5m.

Note. - Mezzanine floor area is counted towards F.A.R. calculation.

17.7.2. Height. - The minimum height of a mezzanine floor shall be 2.2m.

17.7.3. Other requirements. - A mezzanine floor may be permitted over a room or a compartment provided that :-

- (a) It conforms to the standards of living rooms as regards lighting and ventilation in case the size of mezzanine floor is 9.5 m or more.
- (b) It is so constructed as not to interfere under any circumstance with the ventilation of the space over and under it;
- (c) Such mezzanine floor or any part of it shall not be used as a kitchen; and
- (d) In no case a mezzanine floor shall closed so as to make it liable to be converted into unventilated compartments.

17.8. Store Room

17.8.1. Size. - The area of a storeroom in residential buildings shall not be more than 3.sq.m.

17.8.2. Height. - The height of storeroom shall not be less than 2.2.m.

17.9. Garage. -

17.9.1. Garage, Private. - The size of private garage in residential buildings shall be not less than 2.75m.x 5.4m. The garage located in the side open space shall be constructed within from the rear plot line.

17.9.2. Garage Private. - The size of public garage shall be calculated based on the number of vehicles to be parked (as per table) and the minimum parking spaces for each vehicles as specified in byelaw no.16.1

17.9.3 Height. - The minimum headroom in a garage shall be 2.4m.

17.9.4. The plinth of garage located at ground level shall not be less than 15cm above the surrounding ground level.

17.9.5. The garage shall be set back behind the building line for the street/road on to which the plot abuts, and shall not be located affecting the access ways to the building.

17.9.6. Corner Site. - When the site fronts on two streets, the frontage would be as on the street having the larger width. In case where the two streets are of the same width, then the larger depth of the site will decide the frontage and open spaces. In such cases location of the garage (in a corner plot) if provided with in open spaces shall be located diagonally opposite the point of intersection.

17.10. Roofs.

17.10.1 The roof of a building shall be constructed or framed as to permit-drainage of the rain-water there from by means of sufficient rain-water pipes of adequate size, wherever required, so arranged, and fixed as to ensure that the rain-water is carried away from the building without causing dampness in any part of walls or foundations of the building or those of an adjacent buildings.

17.10.2 The authority may required rainwater pipes to be connected to a drain or sewer through a covered channel formed beneath the public footpath to connect the rainwater pipe to the road gutter or in any other approved manner.

17.10.3. Rain water pipes shall affixed to the walls of the building or in recesses or the authority may approve chases cut or formed in such walls or in such other manners as may be approved by the authority.

17.11. Basement

17.11.1. Basement may be put to only the following uses to be constructed with in the prescribed set backs and prescribed buildings lines and subject to a maximum converge on floor 1 (entrance floor);

(I) Storage of the household or other goods for ordinary combustible materials.

(II) Dark room;

(III) Strong rooms, bank cellars etc;

(IV) Air-conditioning equipments and other machines used for services and utilities of the buildings.

(V) Parking spaces; and

(VI) Air-raid shelters during war or other emergency. For buildings more than 15m in height and non-multi family dwellings, there shall be a compulsory basement not less than 50 per cent of plinth area.

17.11.2 The basement shall have the following requirements.

(I)Every basement shall be in the every part at least 2.4 m in height from the door to the underside of the roof slab or ceiling.

(II) Adequate ventilation shall be provided for the basement with a ventilation area not less than 2.5 per cent of the basement.

(III) Only one basement shall be permitted.

(IV) The minimum height of the ceiling of any basement shall be 0.9m and maximum of 1.2m above the average surrounding ground level.

(V) Adequate arrangements shall be such that surface drainage does not enter the basement.

(VI) The walls and floors of the basement shall be water-tight and be so designed that the effect of the surrounding soil and moisture, if any, are taken into account in design and adequate damp proofing treatments is given; and

(VII) The access to the basement shall be separate from the main and alternate staircase providing access and exit from higher floors. Where the staircase is continuous the same shall be enclosed type serving as fire separation from the basement floor and higher floors. Open ramps shall be permitted if they are constructed within the building line subject to the provision of (V).

17.12. Chimneys. - Chimneys shall be built up at least 0.9m above flat roofs provided the top of the chimneys shall not be below the tops of adjacent parapet wall. In the case of sloping roofs, the chimney top shall not be less than ridge of the roof in which the chimney penetrates.

17.13. Lighting and ventilation of Rooms

17.13.1. Lighting and ventilation of rooms. - All habitable rooms shall have, for the admission of light and air, one or more apertures, such as windows and fan lights, opening directly to the external air or into an open verandah, not more than 2.4m.in width.

17.13.2. Where the lighting and ventilation requirements are not met through day lighting and natural ventilation, the same shall be ensured through artificial lighting and mechanical ventilation as per part VIII building services sections 1 lighting and ventilation of national building code of India published by the Indian standards institution. The latest version of the national building code of India shall be taken into account at the time of enforcement of the buildings byelaws.

Notwithstanding the above the minimum aggregate of openings of habitable room and kitchens excluding doors, shall not be less than 1/10 of the floor area for dry hot climate* 1/6 of floor area for wet hot climate* and 1/8 of the area for places which area not dry hot or not wet hot., * The cities/towns with the representative climate and the percentage of opening required shall be as in appendix N.

No portion of a room shall be assumed to be lighted if it is more than 7.5m. From the opening assumed for lighting that portion.

17.13.3. Ventilation Shaft. - For ventilating the spaces for water closets and bath room , not opening on to the front, side rear and interior open spaces, shall open on to the ventilation shaft, the size of which shall not be less than values given below:-

Height of Buildings in m	Size of Ventilation Shaft in sq. m.	Minimum size of shaft in m.
6	1.2	0.9
12	2.8	1.2
18	4.0	1.5
24	5.4	1.8

17.14. Parapet. - Parapet walls and handrails provided on the edges of roofs terraces, balcony etc. shall not be less than 1.05m and not more than 1.20m in height.

17.15. Boundary Wall. - The requirements of the boundary wall is given below :-

(a) Except with the special permission of the authority, the maximum height of the front, side and rear compound wall shall be 2.0m above the level of the center of the front street.

(b) In the case of corner plot the height of the boundary wall shall be restricted to 0.75m. for a length of 10m.

Or tangent length whichever is more on the front and side of the intersections and the remaining height of 2.0m may be made up of railings.

(c) However the provisions of (a), (b) and (c) are not applicable to boundary walls of institutional buildings like jails, sanatoria, hospitals, industrial buildings like workshops, factories and educational buildings like schools, colleges, including the hostels.

17.16. Stables. - No cattle shall be kept in a residential building except as provided for in a land use classification order. The stable or cattle sheds shall be constructed separately and they shall not be nearer to a residential building than 3m. The floor of the stable shall be properly paved, sloped, and drained.

17.17 Special Requirements of Educational Buildings.

17.17.1. No classroom shall admeasure less than 38sq.m.with a minimum dimension of 5.5.m.

17.17.2. The height of any classroom shall not be less than 3.6m

17.18. Special Requirements of Institutional Buildings (Hospital, Maternity Homes And Health Centers)

17.18.1. Any special room in the hospital buildings shall not be admeasured less than 9.5sq.m. in area with no side less than 3m.

17.18.2. Area of the general wards shall be not admeasured less than 40sq.m. With no sides less than 5.5.m.

17.18.3. The height of any room shall not be less than 3.6m.

17.19. Special Requirements of Cinema Theatres (Assembly Halls)

17.19.1. They shall conform to the provisions of Maharashtra Cinema (Regulations) Rules, 1966, as amended from time, and such other rules as may be prescribed from time to time.

17.20. Special Requirements of Mercantile Buildings

17.20.1. Minimum area of shop shall be 6 sq.m. In R-1 zones with a minimum width of 2.0m. and 10sq.m. in R-2 and other zones with a minimum width of 3m.

17.21. Special Requirements of Industrial Buildings

17.21.1. In addition to provisions of these byelaws, regulations prescribed under factory act shall be applicable.

17.21.2. In the case of Industrial buildings with different operations/processes the different (gaseous, solid, liquid)

18. Provision of Lifts

18.1. Provisions of lift shall be made for all building

19.Exit requirements

19.1. General. -The following general requirements shall be apply exits: -

- (a) Every building meant for human occupancy shall be provided with exits sufficient to permit safe escape of occupants in case of fire or other emergency.
- (b) In every building exit shall comply with the minimum requirements of this part except those not accessible for general public use.
- (c) All exits shall be free of obstructions.
- (d) No buildings shall be altered so as to reduce the number, width or protection of exits to less than that required.
- (e) Exits shall be clearly visible and the reach the exit shall be clearly marked and sign posted to guide the population for floor concerned.
- (f) All exit ways shall be properly illuminated.
- (g) Fire fighting equipment where provided along exits shall be suitably located and clearly marked but must not obstruct the exit way and yet there should be clear indication about its locations from either side of the exit way.
- (h) Alarm devices shall be installed to ensure prompt evacuation of the populations concerned through the exits.
- (i) All exits shall provided continuous means of egress to the exterior of a building or to an exterior open space leading to street.
- (j) Exits shall be so arranged that they may be reached without passing through another occupied unit, except in the case of residential buildings.

19.2. Type of Exits: -

- (a) Exits shall be either of horizontal or vertical type. An exit may be doorway, corridor, passageway, to an internal staircase or external staircase, ramps, or to a verandah and/or terraces which have access to the street or to roof of a buildings. An exit may also include a horizontal exit leading to an adjoining building at the same level.
- (c) Lifts and escalators shall not be considered as exits.

19.3. Number And Size of Exits. - The requisite number and size of various exits shall be provided, based on the populations in each room, area of floor based on the occupant load, capacity of exits, travel distance and height of buildings as per provisions of byelaw no.19.3.1 to 19.3.3.

19.3.1. Arrangement of Exits. - Exits shall be so located that the travel distance on the floor shall not exceed 22.5m for residential educational, Institutional and hazardous occupancies and 30m for assembly, business, mercantile, industrial and storage occupancies whenever more than one exits is required for a floor of a building, exits shall be placed as remote from each other as possible. All the exit shall be accessible from the either floor area at all levels.

19.3.2. Occupant Load. - The population in rooms, areas of floors shall be calculated based on the occupant load given in Table 8:

TABLE 8
Occupant load

Sr. No. m/person (1)	Group of occupancy (2)	Occupant load gross area*in (3)
1	Residential	12.5
2	Educational	4
3	Institutional	15+
4	Assembly -	
	(a) With fixed or loose seats and dance floors ...	0.6+
	(b) Without seating facilities including dining rooms.	1.5+
5	Mercantile -	
	(a) Street floor and sales basement	3
	(b) Upper sale floors	6
6	Business and Industrial	10
7	Storage	30
8	Hazardous	...

*The gross area shall mean plinth area or covered area.

Occupant load in dormitory portions of homes for the aged, orphanages, insane asylums etc. where sleeping accommodations is provided shall be calculated at not less than 7.5m gross area/persons. The gross area shall include, in addition to the main assembly room or spaces, any occupied connecting room or space in the same store or in the store's above or below, where entrance is common to such rooms and spaces and they are available for use by the occupants of the assembly occupancy.

19.3.3. Capacity of Exits. - The capacity of exits (doors and stairways) indicating the number of persons that could be safely evacuated through a unit exit width of 50 cm. shall as given in Table 9.

TABLE 9
Occupants per unit exit

Sr. No.	Group of Occupancy	Number of Occupants	
		Stairways	Doors
(1)	(2)	(3)	(4)
1	Residential	25	75
2	Educational	25	75
3	Institutional	25	75
4	Assembly	60	90
5	Business	50	75
6	Mercantile	50	75
7	Industrial	50	75
8	Storage	50	75
9	Hazardous	25	40

19.3.4. For all other buildings excepting single and multi-family dwellings below 15 m in height, there shall be a minimum of two staircases; and one of them shall be an enclosed stairways and the other shall be on the external walls of buildings and shall open directly to the exterior, interior open spaces or to any open place of safety.

19.3.5. Notwithstanding the detailed provision for exits as per byelaw no.19.3.1. to 19.3.3. the following minimum width provisions shall be made for stairways: -

- | | |
|---|--|
| (a) Residential buildings | 1.0m. |
| (b) Assembly building like auditorium, theatres and cinemas | 1.5m. |
| (c) Institutional buildings like hospitals | Up to 10beds- 1.5m.
More than 10 beds-2.0m. |
| (d) Educational buildings like schools, colleges, and etc | 2.00m |
| (e) All other building | 1.5m. |

19.4. Other Requirements of Individual Exits. - The detailed requirements of individual exits are given in byelaw no.19.4.1. to 19.4.6.

19.4.1. Doorways

- (a) Every exit doorway shall open into an enclosed stairway, a horizontal exit, or a corridor or passageway providing continuous and protected means of egress.
- (b) No exit doorways shall be less than 100cm in width. Doorways for bathrooms, water closets, store etc. shall be not less than 75 cm. wide.
- (c) Exits doorways shall open outwards, that is away from the room but shall not obstructed the travel along any exit. No door, when opened, shall reduce the required width of stairways or landing to less than 90cm; overhead or sliding doors shall not be installed.
- (d) Exit door shall not open immediately upon a flight of stairs; a landing equal to at least the width of the door shall be provided in the stairways at each doorway; level of landing shall be the same as that of the floor which it serves.
- (e) Exit doorways shall be opening able from the side which they serve without use of a key.

19.4.2. Revolving Doors

- (a) Revolving doors shall not be used as required exits except in residential, business and mercantile occupancies, but shall not constitute more than half the total required door width.
- (c) When revolving doors are considered as required exit way the following assumptions shall be made:-
 - (I) Each revolving door shall be credited one half a unit exit width.
 - (II) Revolving doors shall not be locate at the foot of a stairway. Any stairways served by a revolving door shall discharge through a lobby or foyer.

19.4.3 Stairways

- (a) Interior stairs shall not be constructed of ordinarily combustible materials throughout.
- (b) Interior staircase shall be constructed as a self-contained unit with at least one side adjacent to an external wall. Wherever a building is not identified by byelaw no.6.2.6.1.exceed 10.5m. in height and is served by single staircase the same shall be of enclosed type.
- (c) A staircase shall not be arranged round a lift shaft unless the latter is entirely enclosed by material of fire resistance rating as that for type of construction itself. For buildings more than 15m in height the staircase location shall be to the satisfaction of the competent fire adviser to the government of Maharashtra.
- (d) The minimum width of treads without of treads without nosing shall be 25cm for an internal staircase for residential buildings. In the case of other buildings the minimum tread shall be 30cm. the treads shall be constructed and maintained in a manner or prevent slipping.

- (e) The maximum height of riser shall be 19cm. in the case of residential buildings and 15cm. in the case of other buildings. They shall be limited to 12 per flight.
- (f) Handrails shall be provided with a minimum height of 90cm. from the center of the tread.
- (g) The minimum headroom in a passage under the landing of a staircase and under the staircase shall be 2.2m.
- (h) No living spaces, store or other fire risk shall open directly to the open spaces or can be reached without passing through any door other than a door provided to former a drought lobby.
- (i) In the case of assembly, institutional, residential hotels and business buildings the exit sign arrow indicating the way to the escape route shall be provided at a height of 0.5m. from the floor level on the wall and shall be illuminated by electric light connected to corridor circuits. All exit way marking sign should be flush with the wall and so designed that no mechanical damage shall occur to them due to moving of furniture or other heavy equipments. Further all landing of floor shall have floor indication boards indicating the number of floor as per byelaw no.3.2.7. The floor indication board shall be placed on the wall immediately facing the flight of stairs and nearest to the landing. It shall be of size not less than 0.5x 0.5m.
- (j) In the case of single staircases it shall terminate at the ground floor level and the access to the basement shall be by a separate staircase. Wherever the building is served by more than one staircase one of the staircase ma lead to basement level provided the same is separated at ground level by either a ventilated lobby with discharge points at two different ends through enclosures (see byelaw no.17.11.2.).

19.4.4. Fire Escapes or External Stair. -

- (a) Fire escape shall not be taken into account in calculating the evacuation time of a building.
- (b) All fire escapes shall be directly connected to the ground.
- (c) Entrance to fire escape shall be separate and remote from the internal staircase.
- (d) The route to fire escape shall be free of obstructions at all times, except a doorway leading to the fire escape which shall have the required fire resistance.
- (e) Fire escapes shall be constructed of non-combustible materials.
- (f) Fire escape stairs shall have straight flight not less than 75cm.wide with 15cm treads and risers not higher then 19cm. The number of risers shall be limited to 16 per flight.
- (g) Handrails shall be of a height not less than 90cm.

19.4.5. Spiral Stairs (Fire escape). - The use of spiral staircase shall be limited to how occupant load and to a building of height 9m. Unless they are connected to platforms, such as balconies and to allow terraces to pause.

A spiral fire escape shall be not less than 150cm in diameter and shall be designed to give adequate headroom

19.4.6. Ramps

- (a) Ramps with a slope of not more than 1 in 10 may be permitted for and shall comply with all the applicable requirements of required stairways as to enclosure, capacity and limiting dimensions. Ramps shall be surfaced with approved non-slipping materials.
- (b) The minimum width of the ramps in hospitals shall be 2.25m.
- (c) Handrails shall be provided on both sides of the ramp.
- (d) Ramps shall lead directly to outside open space at ground level or courtyards or safe place.

19.4.7. Corridors

- (a) The minimum width of a corridor shall be 1.0m.
- (b) For buildings more than 15m. In height the inter-connecting corridor between staircases shall be provided with at least one smoke stop door across the corridor or enclosed space between the doors in the enclosing walls of any two staircases.

19.4.8. Refuge Area. - For all buildings exceeding 15m. in height excepting multi-family building, one refuge area on the floor immediately above 18m.shall be provided.

19.4.8.1. Refuge area shall be provided on the external walls as cantilever projections or in any other manner (which will not be covered in F.A.R.) with a minimum area of 15.sqm. and to be calculated based on the population on each floor at the rate of 1sq.m. Per person.

19.4.9. Lifts.

- (a) All the floors shall be accessible for 24 hours by the lifts. The lifts provided in the buildings shall not be considered as a means of escapes in case of emergency.
- (b) Grounding switch at ground floor level to enable the fire services to ground the lift cars in an emergency shall also be provided in the case of building above 15m.in height.
- (c) The lift machine room shall be separate and no other machinery shall be installed there in.

20.Fire Protection Requirements

20.1. Building shall be planned, designed and constructed to ensure fire safety and this shall be done in accordance with part IV fire protection of National Buildings Code of India, unless otherwise specified in these byelaws. In the case of buildings (identified in byelaw no.6.2.6.1.), the building scheme shall also be cleared by the competent fire authority as approved by the fire adviser to the government of Maharashtra.

- 20.2.** The additional provisions which are more than 15m. in height and buildings identified in byelaw no.6.2.6.1. shall be as given in appendix P.
- 20.3.** For buildings which are more than 24m. in height the additional fire protection requirements specified in the building byelaw and development control rules for Maharashtra corporations 1978 shall apply.

21. Powers of Relaxation

The director of town planning state may permit special relaxation to any of the byelaws, provided the relaxation sought does not violate the health safety, fire structural safety, public safety of the building and neighborhood.

PART III - STRUCTURAL SAFETY AND SERVICES

21. Structural design

- 21.1.** The structural design of foundations, masonry, timber, plain concrete, reinforced concrete, pestered concrete and structural steel shall be carried out in accordance with part VI structural design section1-loads, section2-foundation, section 3- wood, section 4-masonry, section5-concrete, section6-steel, of national building of code of India.
- 21.2.** The thickness of masonry walls built of different strength of masonry units (bricks) and mortar for different occupancies and other structural design parameters shall be as given in the eight monograms given at appendix P.

22. Quality of Materials and Workmanship

- 22.1.** All materials and workmanship shall be good quality conforming generally to accepted standards of public works department of Maharashtra and Indian standard specifications and codes as included in part V building materials and part VII constructional practices and safety of national building code of India.
- 22.1.1.** For housing schemes put up for EWS and LIG groups the quality of materials to be used shall be relaxed subject to the approval of the authority, provided the housing units constructed of combustible materials are properly segregated from fire propagation point of view.
- 22.1.2. Used Material.** - The use of old building materials shall be allowed in construction provided that these conform to the standards of new materials as specified above.
- 23.1.3. Storage of Materials.** - All building materials shall be stored on the building site in such a way as to prevent deterioration or impairments of their structural and other essential properties. Further, the storage of materials shall be done exclusively within a building plot. If congested area or in GAO than, where it is not possible to store, within building plot, temporary storage of material like sand, stone etc. shall be permitted on the public roads by authority provided that such storage does not cause traffic nuisance, both pedestrian and vehicular.
- 22.2.** All borrow pits dug in the course of construction and repairs of building, roads, embankments, etc. shall be deep and connected with each other in the formation of a formation of a drain directed towards the lowest level and properly sloped for discharge into a river stream, connected or drain and no person shall create any isolated borrow pit which is likely to cause accumulation of water which may breed mosquitoes.
- 22.3. Demolition.** - Following byelaws shall apply for demolition work within municipal area -
- Before commencing any work of demolition, a careful and detailed study shall be made of the structure to be demolished including its surroundings. While working out the plan of demolition, safety of the adjoining structures shall be ensured and have to be approved by the authority.
 - Before commencing any demolition work, specific permission shall be obtained from the authority, and shall be pasted prominently at the site;
 - If the structure to be demolished is one which may have hidden damage caused by fire, flood or earthquake, measure necessary to prevalent accidental collapse, such as bracing, shoring, etc., shall be provided to the satisfaction of the authority;
 - Prominent danger sings shall be pasted all round the property and property and all opening giving access to the structures shall be barricaded and closed to all except the workmen. During night, warning light shall be placed on or above all barricades;
 - All gas, water, electricity, steam and other services lines shall be hut off outside the property line after notifying the services companies and authorities concerned and obtaining their approval. Any temporary service connections required for the demolition work shall be separately taken and arranged in such a manner as to afford safety to the workmen;
 - When work is not in progress, watchmen shall be provided to prevent unauthorized entry of the public into the danger zone;
 - All necessary safety appliances shall be issued to workers before starting of work;
 - Safety distance to ensure the safety of the public shall be clearly marked and indicated by signs. All main roads shall be open. Diversions for pedestrians shall be constructed, where necessary, for safety.

- 23.** Alternative materials, methods of design and construction and tests.

- 23.1.** The provisions of the byelaws are not intended to prevent the use of any material or method of design of construction not specifically prescribed by the byelaws provided any such alternative has been approved
- 23.2.** The authority may approve any such alternative provided it is found that the proposed alternative is satisfactory and conforms to the provision of relevant parts regarding material, design and that construction and that material, method or work offered is, for the purpose intended at least equivalent to that prescribed in the byelaws in quality, strength, compatibility, effectiveness, fire and water resistance durability and safety.
- 23.3 Tests.** - Whenever there is insufficient evidence of compliance with the provisions of the byelaws or evidence that any material or method of design or methods of construction does not conform to the requirements of the byelaws or in order to substantiate claims for alternative materials, design or methods of construction, the authority may require tests sufficiently in advance as proof of compliances. These tests shall be made by an approved agency at the expense of the owner.
- 23.3.1.** Test methods shall be as specified by the byelaws for the materials or design or constructions in question. If there are no appropriate test methods specified in the byelaws, the authority shall determine the test procedure. For methods of test for buildings materials reference may be made to relevant Indian standards as given in the national building code of India, published by the Indian standard, institution. The latest version of the national of the building code of India shall take into account at the time of enforcement of these byelaws.
- 23.3.2.** Copies of the results of all such tests shall be retained by the authority for a period of not less than two after the acceptance of the alternative material.
- 24. Buildings Services**
- 24.1.** The building planning, design and installation of electrical installations, air-conditioning and work, installation of lifts and escalators shall be carried out in accordance with part VIII building services, section 2- electrical installations, section 3- air-conditioning and heating, section 5- installation of lifts and escalators, of national building code of India.
- 25. Plumbing Services**
- 25.1.** The planning design, construction and installation of water supply, drainage and sanitation and gas supply system shall be in accordance with part IX plumbing services section 1 water supply, section 2 drainage and sanitation and section 3 gas supply, of or national buildings code of India.
- 25.2. Requirements of Water Supply in Buildings.** - The requirements water supply for various occupancies shall be as given in tables 10, 11 and 12.
- 25.2.1. Wells.** - Wells intended to supply water for human consumption or domestic purpose, where provided, shall comply with the requirements of byelaw no. 25.2.1.1. and 25.2. 1.2.
- 25.2.1.1. Location** - The well shall be located:
- Not less than 15m from any ash pit, refuse pit, earth closet or privy and shall be located on a site upwards from the earth closet or privy;
 - Not less than 18m from any access pit soak way or boreholes and shall be located on a site upwards from the earth closet or privy;
 - That contamination by the movement of sub-soil or other water is unlikely; and
 - Not under a tree or otherwise it should have a canopy over it so that leaves and twigs may not all fall into the well and rot
- 25.2.1.2. Requirements.** - The well shall:
- Have a minimum internal diameter of not less than 1m.
 - Be constructed to a height not less than 1m, above the surrounding ground level, to from a parapet or kerbed and to prevent surface water from flowing into well and shall be surrounded with a paving constructed of impervious materials which shall extend for a distance of not less than 1.8m in every direction from the parapet from the kerbed forming the well head and the upper surface of such a paving shall be sloped away from the well;
 - Be of sound and permanent construction (Pucca) throughout. Temporary or exposed (KUTCHA) wells shall only be permitted in fields or gardens for purpose of irrigation;
 - The interior surface of the walls of the well shall be rendered impervious for a depth of not less than 1.8m. Measure from the level of the ground immediately adjoining the wellhead.
- 25.3. Requirements of Sanitary Fittings.** - The sanitary fittings and installations for different occupancies shall be as given in tables 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24.

TABLE 10
Per Capita Water requirements for various occupancies/use

Sr. No.	Type of Occupancy	Consumption per head day (in liters)
1	2	3
1	Residential	135
	(a) In living units	

(b) Hotels with lodging accommodation (per bed)	180
2 Educational	
(a) Day schools	45
(b) Boarding schools	135
3 Institutional (medical Hospitals)	
(a) No. of beds not exceeding 100	340
(b) No. Of beds exceeding 100	450
4 Assembly- Cinema theatres, auditoria etc. (per seat of accommodation)	15
5 Government of semi-public business	45
6 Mercantile (commercial)	
(a) Restaurants (per seat)	70
(b) Other business buildings	45
7 Industrial	
(a) Factories where bathrooms are to be provided	45
(b) Factories where no bath room sere required to be provided	30
8 Storage (including warehouse)	30
9 Hazardous	30
10 Intermediate/stations (excluding mail and expenses stops)	45(25)*
11 Junction stations	70(45)*
12 Terminal/Stations	45
13 Intentional and domestic airports	70

*The values in parenthesis are for stations where bathing facilities are not provided.

Note. - The number of persons for serialno.10 to 13 shall be determined by the average number of passengers handled by the station daily; due consideration may be given the staff and workers likely to use the facilities.

TABLE 11
Flushing Storage Capacities

Sr. no. (1)	Classification of Buildings (2)	Storage Capacity (3)
1	For tenements having common convenience	900 liters net WC seat.
2	For residential premises other than tenements having common Convenience.	270 liters net for one WC seat and 180 Liters for each additional seat in the same flat
3	For Factories and Workshops	900 liters per WC seat and 180 liters per urinal seat.
4	For cinemas, public assembly halls etc.	900 liters per WC seat and 350 liters per urinal seat.

TABLE 13
Sanitation Requirements for shops and commercial offices

Sr. No. (1)	Fitments (2)	For personnel (3)
1	Water closet	one for every 25 persons or part thereof exceeding 15 (including employee And customers) for female personnel 1 for every 15 persons or part thereof exceeding 10
2	Drinking Water Fountain	One for every 100 persons with a minimum of one on each floor.
3	Wash Basin	One for every 25 persons or part thereof.
4	Urinals	same as serial no.3 of table 18.
5	Cleaner's Sink	One per floor minimum, preferably in or adjacent to sanitary rooms.

Note. - No. of customers for the purpose of the above calculation shall be the average number of persons in the premises for a time interval of one hour during the peak period. For male-female calculation a ratio of 1:1 may be assumed.

TABLE 12
Domestic Storage Capacities

Sr. No. (1)	No. Of floors (2)	Storage capacity (3)	Remarks (4)
For premises occupied as tenements with common convenience			
1	Floor 1 (Ground)	Nil	provided no down take fittings are installed.
2	Floors 2,3,4,5 and upper floors	500liters per tenements	
For premises occupied as flats or blocks			
1	Floors 1	Nil	Provided no down take fittings are Installed.
2	Floors 2,3,4,5 and upper floors	500liters per tenements	

Note 1. - If the situated at a place higher than the road level in front of the premises, storage at ground level shall be provided on the same lines as on floor 2.

Note 2. - The above storage may be permitted to be installed provided that the total domestic storage calculated on the above basis is not less than the storage calculated on the down take fittings according to the scales given below;

Downtick	70 liters each
Showers	135 liters each
Bathtubs	200 liters each

TABLE 14
Sanitations requirements for hotels

Sr. No.	Fitments	For residential Public and staff	For public rooms		For non-residential staff		
			For male (4)	For female (5)	For male (6)	For female (7)	
1	Water closet	one per 8 persons	One per 100	Two per 100	one for 1-15	One for 1-12	
		Omitting occupants	persons up to	persons up to	Two for 16-35	Two for	
		Of the room with	400 persons	200 persons	Three for 36-65	Three for	
		Attached water closet	for over 400	over 200 add	Four for 66-100	Four for	
		Water closet minimum Of 2 in both sexes lodge	add at the rate of one per 250 Persons or part Thereof.	at the rate of one per 100 persons or Part thereof.			
2	Ablution water	One in each water closet.	One in each water Closet	One in each water closet.	one in each water Closet	one in each closet.	
		One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.				Persons	
3	Urinals		One for 50 persons or part thereof		Nil, up to one for 7-20 Two for 21-45 Three for 46-70 Four for 71-100		

TABLE 14

(1)	(2)	(3)	(4)	(5)	(6)	(7)
4	Washbasins	one per 10 persons	One per water closet and urinal	One per water closet provided.	One for 1-15	One for 1-12
		Omitting the wash Basins installed in	provided.		Two for 16-35	Two for
		The room suites.			Three for 36-65	Three for
					Four for 65-100	Four foe
						Five for
						Six for 78-
5	Baths	One per 10 persons Omitting occupants Of the room with bath In suite.				
6	Slope sink	one per 30 bedrooms (One per floor mini.)				
7	Kitchen sinks	one in each kitchen.	One in each Kitchen	One in each Kitchen.	One in each Kitchen.	One in each Kitchen.

Note. - It may be assumed that the two-thirds of the number are males and one-third females.

TABLE 15
Sanitation Requirements for Educational Occupancy.

Sr. No.	Fitments	Nursery school	boarding institutions		other Educational Institutions	
			For Boys	For girls	For boys	For girls
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Water closet	One per 30 pupils And part thereof.	One/every 8 pupils Or part thereof.	One/every 6 Pupils or part Thereof.	One/80 pupils or part thereof.	One/50 pupils Part thereof.
2	Ablution each	One in each water Closet.	One in each water Closet.	One in each water Closet.	One in each water Closet.	One in Water
One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinals.						
3	Urinals		One per 25 pupils Or part thereof.		One per 20 pupils Or part thereof.	
4	Wash Basin	One per 30 pupils or part thereof.	One per 8 pupils Or part thereof.	One per 6 pupils Or part thereof.	One per 80 pupils Or part thereof.	One per Or part
5	Baths	One bath sink per 40 pupils.	one for every 6 Pupils or part Thereof.	One for every 6 pupils or part Thereof.		
6	Drinking water	One for every 50 Pupils or part thereof.	One for every 50 Pupils or part Thereof.	One for every 50 pupils or part Thereof.	One for every 50 pupils or part Thereof.	One for every pupils or part Thereof.
7	Cleaner's sink		One per floor Minimum.	One per floor Minimum.	One per floor Minimum.	One per floor Minimum.

Note. - For teaching staff, the schedule of fitments to be provided shall be the same as in the case of office buildings (table 18).

TABLE 16
Sanitation Requirements for Institutional (Medical) Occupancy- Hospitals.

Sr. No.	Fitments	Hospitals with Indoor patient wards	Hospitals with out -door patient wards.		Administrative buildings	
		For males & for females	For males	For females	For male personnel	For female Personnel.
1	2	3	4	5	6	7
1	Water closet	One for every 8 beds Or part thereof.	one for every 100 Persons or part Thereof.	Two for every 100 persons or part Thereof.	One for every 25 persons or part Thereof.	one for persons Part
2	Ablution taps	One in each water closet.	One in each water Closet.	One in each water Closet.	One in each water Closet.	One in Water
One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.						
3	Washbasins	2 up to 30 beds; add One for every additional	one for every 100 persons or part	one for every 100 persons or part	one for every 25 persons or part	one for persons or

4 Baths with shower floor	30 beds or part thereof. One bath with shower	Thereof.	Thereof.	Thereof. one on each floor	Thereof. one on each
5 Bedpan washing Sinks.	For every 8 beds or part Thereof. one for each ward				
6 Cleaner's sinks	one for each ward	one for floor Minimum.	one per floor Minimum.	one per floor Minimum.	one per floor Minimum.
7 Kitchen sinks & Dish washer (Where kitchen is provided)	one for each ward				
8 Urinals		One for every 50 Persons or part Thereof.		One up to 20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons For 101 to 200 persons Add at the rate of 3 per cent, For over 200 persons Add at the rate of 2.5 Percent.	

TABLE 17
Sanitation requirements for Institutional (medical) Occupancy - (staff quarters and Hostels)

Sr. No.	Fitments	Doctor's Dormitories		Nurses Hostel
		For male staff	For female staff	
1	2	3	4	5
1	Water closet thereof	One for 4 persons	One for 4 persons	One for 4 persons or part
2	Ablution taps	One in each water closet	One in each water closet.	One in each water closet.
3	Wash basins	One for every 8 persons or part thereof.	One for every 8 persons Thereof.	One for every 8 persons Or part thereof.
4	Baths (with one for Shower)	One for 4 persons or part thereof.	One for 4 persons or part thereof.	One for 4-6 persons or part
5	Cleaners sinks	One per floor minimum	One per floor minimum	One per floor minimum.

TABLE 18
Sanitation Requirements for Governmental and public business occupancies and offices

Sr. No.	Fitments	For male personnel	For female personnel
		3	4
1	Water closet thereof	one for every 25 persons or part thereof.	One for every 15 persons or part
2	Ablution taps One water tap with draining arrangement shall be provided for every 50 persons or part thereof, in the vicinity Of water closet and urinals.	One in each water closet	One in each water closet
3	Urinals	Nil up to 6 persons One for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons For 101 to 200 persons add at the rate of 3 per cent For over 200 persons add at the rate of 2.5 per cent.	
4	Wash basins	One for every 250 persons or part thereof.	
5	Drinking Water fountains	one for every 100 persons with a minimum of one for each floor.	
6	Baths	preferably one on each floor	
7	Cleaner's Sinks	One per floor minimum preferably in or adjacent to sanitary rooms.	

TABLE 19
Sanitation requirements for residential

Sr. No.	Fitments	Dwellings with individual convenience	Dwellings without individual conven ices
1	2	3	4
1	Bath Room	1 provided with water tap	1 for every three tenements
2	Water closet	1	1 for every three tenements
3	Sink (or NAHANI) in The floor.	1	
4	Water tap	1	1 with draining arrangements in each Tenements.
	common		1 in common bath rooms and Water closet.

Note. - Where only closet is provided in a dwelling, the bath and water closet shall be separately accommodated.

TABLE 20
Sanitation Requirement for Assembly occupancy Buildings (cinemas, Theatres and Auditoria)

Sr. No.	Fitments	For public		For staff	
		Male	female	male	female
1	2	3	4	5	6
1	Water closets persons	1 per 100 persons up To 400 persons.	3 per 100 persons up To 200 persons.	1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 2 for 13-25
		For over 400 persons, Add at the rate of 1 Per 250 persons or Part thereof.	For over 200 persons, add at the rate of 2 per 100 persons or part thereof.		
2	Ablution taps closet.	1 in each water closet	1 in each water closet.	1 in each water closet	1 in each water closet.
	thereof	One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closet and urinals.			
3	Urinals	1 for 25 persons or part thereof.		Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons	
4	Wash basins persons	1 for every 200 persons Or part thereof.	1 for every 200 persons Or part thereof.	1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 2 for 13-25
5	Drinking water Fountains.	1 for 100 persons or part thereof.			

Note. - It may be assumed that two-thirds of the numbers are males and one-third females.

TABLE 21
Sanitation Requirements for Assembly Occupancy Buildings, (Art galleries, libraries and Museums)

Sr. No.	Fitments	For public		for staff	
		Male	Female	Male	Female
1	2	3	4	5	6
1	Water closets persons	1 per 200 persons up to 400 Persons.	1 per 100 persons up 200 persons.	1 for 1-15 persons 2 for 16-35 persons	1 for 1-12 2 for 13-
	25persons				

	For over 200 persons, add At the rate of 1 per 250 Persons or part thereof.	For over 200 persons, Add at the rate of 1 per 150 persons or part thereof.		
2 Ablution taps	1 in each water closet.	1 in each water closet.	1 in each water closet.	1 in each water closet.
One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinals.				
3 Urinals	1 for 50 persons		Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons	
4 Wash basins	1 for every 200 persons Or part thereof. For over 400 persons, add at the Rate of 1 per 250 persons Or part thereof.	1 fro every 200 persons or part thereof. For over 200 persons add at the rate of 1 per 150 persons Or part thereof.	1 for 1-15 persons 2 for 16-35 persons	1 for 1-15 persons 2 for 13-25
5 Cleaner's sinks	1 per floor, minimum			

Note. - It may be assumed that two-thirds of the numbers are males and one-third females.

TABLE 22
Sanitation Requirements for Restaurants

Sr. No.	Fitments	For public		For staff	
		Male	female	Male	Female
1	2	3	4	5	6
1	Water closets	1 for seats up to 200 seats. For over 200 seats, add at The rate of one per 100 Seats or part thereof.	1 for 50 seats up to 200 seats. For over 200seats. add at the rate of one Per 100 seats or part Thereof.	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons	1 for 1-12 2 for 13-25 3 for 26-40 4 for 41-57 5 for 58-77 6 for 78-100
2	Ablution taps	1 in each water closet	1 in each water closet	1 in each water closet	1 in each water closet.
One water tap with draining arrangements shall be provided for every 50 persons or part thereof in the vicinity of water closets and urinals.					
3	Urinals	One per 50 seats		Nil up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons	
4	Wash basins		1 for every water closet provided		
5	kitchen sinks & dish washer		1 in each kitchen		
6	Slope or services sink		1 in the restaurant		

Note. - It may be assumed that two-thirds of the numbers are males and one-third females.

TABLE 23
Sanitation Requirements for Factories

Sr. No. 1	Fitments 2	For male personnel 3	For female personnel 4
1	Water closets	1 for 1-15 persons 2 for 16-35 persons 3 for 36-65 persons 4 for 66-100 persons For 101 to 200 persons, add at the rate of 3 per Cent. For over 200 persons, add at the rate of 2.5 per cent.	1 for 1-12 persons 2 for 13-25 persons 3 for 26-40 persons 4 for 41-57 persons 5 for 58-77 persons 6 for 78-100 persons For 101 to 200 persons add at the rate of 5 per cent for over 200 persons, Add at the rate of 4 per cent.
2	Ablution taps	1 in each water close One water tap with draining arrangements shall be provided for every 50 persons or part thereof in vicinity of water closets and in urinals.	1 in each water closet
3	Urinals	Nil, up to 6 persons 1 for 7-20 persons 2 for 21-45 persons 3 for 46-70 persons 4 for 71-100 persons For 101 to 200 persons, add at the rate of 3 per cent. For over 200 persons, add at the rate of 2.5 per cent.	
4	Washing taps with draining Arrangements.	1 for every 25 persons or part thereof.	1 for every 25 persons or part thereof.
5	Drinking water fountains	1 for every 100 persons with a minimum Of one on each floor.	
6	Baths (preferably showers)	As required for particular trades or occupations.	

Note. - For many trades of a dirty or dangerous character, more extensive provisions are required.

TABLE 24
Sanitary Requirements for Large stations and Airports

Sr. No. 1	Place 2	WC for males 3	WC for females 4	Urinals for males only 5
1	Junction stations, intermediate Stations and bus stations.	3 for first 1000 persons & For subsequent 1000 Persons or part thereof.	4 for first 1000 persons and 1 for every Additional 1000 persons.	4 for every 1000 persons 1 for every additional 1000 Persons.
2	Terminal station and bus Terminals.	4 for first 1000 persons & 1 for every subsequent 1000 Persons or part thereof.	5 for first 1000 persons and for every subsequent 2000 persons for part thereof.	6 for first 1000 persons for every or part thereof.
3	Domestic airports, min	2*	4*	2*
	For 200 persons	5	8	6
	For 400 persons	9	15	12
	For 600 persons	12	20	16
	For 800 persons	16	26	20
	For 1000 persons	18	29	22
4	International airports			
	For 200 persons	6	10	8
	For 600 persons	12	20	16
	For 1000 persons	18	29	22

*At least one Indian style water closet shall be provided in each toilet. Assume 60 males to 40 females in any area.

Note. - Provision for washbasins, baths including shower stalls shall be in accordance with part IX section 2 drainage and sanitation of national buildings code of India.

25.3.1. Septic Tanks. - Where septic tank is used for sewage disposal, the location, design and construction of the septic tank shall conform to requirements of byelaw no.25.3.1.1. And 25.3.1.2.

25.3.1.1. Location of septic tanks and subsurface absorption systems. - A subsoil dispersion system shall not be closer than 18 m from any source of drinking water, such as well to mitigate the possibility of bacterial pollution of water supply. It shall also be as far removed from the nearest habitable building as economically feasible but not closer than 6m, to avoid damage to the structures.

25.3.1.2. Requirements

- (a) Dimensions of septic tanks. - Septic tanks shall have minimum width of 75cm, minimum depth of one meter below water level and a minimum liquid capacity of one cubic meter. Length of tanks shall be 2 to 4 times the width;
- (b) Septic tanks may be constructed of brickwork, stone masonry concrete or other suitable materials as approved by the authority;
- (c) Under no circumstance should effluent from a septic tank be allowed into an open channel, drain or body of water without adequate anaerobic treatment through soak pit;
- (d) Minimum nominal diameter of pipe shall be 100mm further, at junctions of pipes in manholes; direction of flow from a branch connection should not make an angle exceeding 45 with the direction of flow in main pipe.
- (e) The gradients of land drains, under-drainage as well as the bottom of dispersion trenches and soak ways should be between 1:300 and 1:400;
- (f) Every septic tank shall be provided with ventilating pipe of at least 50 mm diameter. The top of the pipe shall be provided with a suitable cage of mosquito-proof wire mesh. The ventilating pipe shall extend to a height which cause no smell nuisance to any building in the area, generally, the ventilating pipe may extend to a height about 2m when the septic tank is at least 15m away from the nearest building and to a height of 2m above the top of the building when it is located closer than 15meters;
- (g) When the disposal of septic tank effluent is to seepage pit, the seepage pit may be of any suitable shape with the least cross-sectional dimension of the 90cm and not less than 100cm in depth below the invert level of the inlet pipe. The pit may be lined with stone, brick or concrete blocks with dry open joints, which should be backed with at least 7.cm of clean coarse aggregate. The lining above the inlet level should be finished with mortar. In case of pits of large dimensions, the top portion may be narrowed to reduce the size of the RCC cover slabs. Where no lining is used, especially near tress, the entire pit should be filled with loose stones. A masonry ring may be constructed at the top of the pit to prevent damage by flooding of the pit by surface run off. The inlet pipe may be taken down a depth of 90cm from the top as an anti-mosquito measure; and
- (h) When the disposal of septic tank effluent is to a dispersion trench the dispersion trench shall be 50 to 100 cm deep and 30 to 100 cm wide excavated o a slight gradient and shall be provided with 15 to 25 cm of washed gravel for crushed stones. Open jointed pipes placed inside the trench shall be made of unglazed earthenware clay or concrete and shall have minimum internal diameter of 75 to 100 mm. Each dispersion trench should not be longer than 30m. And trenches should not be placed closer than 1.m.

26. Signs and outdoors display structures

26.1.The display of advertising signs on building and shall be in accordance with part X signs and outdoors display structures of national buildings code of India published by the India standards institution.

26.2. General. - The following signs are prohibited along national highways, state highways, and other major roads above 18 m width:

- (a) Any sign that by reason of its shapes, positions or color may be confused with an authorized traffic sign or signal;
- (b) Any sign containing the word "stop", "look", "danger" or other similar word that might mislead or confuse the traveler;
- (c) Any sign that is attaches to or printed o a rock or other natural object; and
- (d) Any sign that is located with in a public right-of-way unless it is unofficial street name traffic sign or signal or other official sign.

26.3.Ground signs. - Following byelaws shall apply for ground signs within municipal area:

- (a) **Dimensions.** - No ground shall be erected to a height exceeding 9m above the ground. Lighting reflectors may extend beyond the top or face of the sign;
- (b) **Supports and Anchorage.** - Every ground sign shall be firmly supported and anchored to the ground. Supports and anchors shall be treated timber in accordance with good practice or metal treated for corrosion resistance or masonry or concrete;

(c) **Obstruction to Traffic.** - No ground sign shall be erected as to obstruct free access to or egress from any buildings; and

(d) **Set back.** - No. Ground sign shall be set nearer to the street line than the established building line.

26.4. Roof sign. -Following byelaws shall apply for roof sign within municipal area:

(a) **Location.** - No roof sign shall be placed on or over the roof of any building, unless the entire roof construction is of noncombustible material;

(b) **Projection.** - No roof sign shall project beyond the existing building line of the building on which it is reacted beyond the roof in any direction; and

(c) **Supports and Anchorage.** - Every roof sign shall be thoroughly secured and building or over which it is erected. All loads shall be softly distributed to the structural members of the building.

26.5. Wall Signs. - Following byelaws shall apply for wall signs within municipal area:

(a) **Dimensions.** - The total area of sign shall not exceed 10 percent of the total area of the façade on which the sign is erected the façade on which the sign is erected of the building shall be subdivided into blocks of uniform height and the area of the sign erected on a particular block shall not exceed 10 percent of the area of that block;

(b) **Projection.** - No wall sign shall extend above the top of the wall or beyond the ends of the wall to which it is attached. At any place where pedestrians may pass along wall, any wall sign attached thereto shall not project more than 7.5cm., there from within a height of 2.5 m measured from the level of such place :

(c) **Supports and Attachment.** - Every wall sign shall be securely attached to walls. Wooden blocks or anchorage with wood used in connection with screws, staples or nails shall not be considered proper anchorage, except in the case of wall signs attached to walls of wood; and

(d) **Reflectors.** - Lighting reflectors may project 2.4 m beyond the face of the wall provided such reflectors are at least 4m above the footpath level, but in no case shall such reflectors project beyond a vertical plane 1 m inside the curb line.

26.6. Projecting signs. - No projecting sign or any part of its supports or framework shall project more than 2m beyond the main face of the building to which such sign is attached. At every place where pedestrians may pass underneath a projecting sign, an over-head clearance of at least 2.5m shall be maintained.

Appendix A.

(Byelaw No.6.1.)

From for first application for development and to erect a building
(Under section 44/45/58/69 of Maharashtra Regional and Town planning act, 1966 and under section
189/190,191/192 of Maharashtra Municipalities act, 1965)
(On Rs.0.20 Stamp)

To

The Authority

Municipal Council of _____ *

Sir,

I hereby give notice that I intend to carry out development in the site/to erect, to re-erect/to demolish/to make material alteration in the building.....on/in plot No..... land, Town and Revenue Survey No.C.T.S. No.....Situating at road/street.....City.....

I forward herewith the following plans and statements (Item 1 to 6) in quadruplicate, where applicable, signed by me and (name in block letters)....., the licensed Architect/Engineer/StructureEngineer/Supervisor-Licence No.....who have prepared the plans, designs and a copy of other statements/documents/as applicable Items to 9):

1. Key plan (Location) plan
2. Site plan
- **3. Subdivision layout plan.
- **4. Building plan
5. Services plan.
6. Particulars of development in form.
7. Ownership Title.
8. Attested copy of receipt for payment of application fee
9. Clearance Certificate of tax arrears

I request that the proposed development/construction may be approved and permission accorded to me to execute the work.

Signature of Owner

Name of owner

Address of Owner

Date

FROM

*Name of a class Municipal Council.

**Depending on development work for land subdivision or building work.

FROM GIVING PARTICULARS OF DEVELOPMENT

(Part of Appendix A-Item 6)

1. Is the plot affected by any reservations or road lines? If yes, are these correctly and clearly marked on the block plan?
2. What is the total area of the plot in sq. m.?
3. Is the plot a part of a city Triangulation Survey Number, Revenue Survey Number of Hiss Number or a final plot of a town planning scheme or part of an approved layout?
4. (a) What is the average (a) prescribed and (b) existing width of the street? If the plot about two or more streets, the information in respect of all streets should be given.
(b) What is the height of the building (a) above the center of the street, (b) above the average ground level of the plot?
(c) In case of building under byelaws number 6.2.6.1. Please state whether the proposed fire protection and fire fighting arrangements to be provided for the building conform to appendix P. If not give reasons against each.

5. Give details of occupancy, floor wise: -		Exiting	Proposed
Floor 1	.. .. .	..	..
Floor 2	.. .. .	..	..
Floor 3	.. .. .	..	..
Floor 4	.. .. .	..	..
Floor 5	.. .. .	..	..
Floor 6	.. .. .	..	..

6. (a) what is the total floor area of the proposed work, floor-wise: -		Floor	Floor area
Floor 1	.. .. .	..	..
Floor 2	.. .. .	..	..
Floor 3	.. .. .	..	..
Floor 4	.. .. .	..	..
Floor 5	.. .. .	..	..
Floor 6	.. .. .	..	..

(b) What is the volume of proposed constructions in case of mercantile/storage buildings?

7. (a) What is the number of tenements proposed ?
(b) If there are existing structures on the plot: -
(I) What is the total floor area of all existing structures to be retained?
(II) What is the number of existing tenements to be retained?
(C) Number of beds/seats in institutional/assembly occupancies

8. (a) What is the width of the means of access?
(b) Will it be paved, drained and kept free of encroachment?

9. The materials to be used in construction: -							
Walls	..	..	..	..	..	..	..
Roofs	..	..	..	..	..	..	..
Floors	..	..	..	..	..	..	..

10. Details of the staircases: -							
(a) Number	..	..	..	..	..	..	..
(b) Width	..	..	..	..	..	..	..
© Materials of construction	..	..	..	..	..	..	..

11. The number of latrines/urinals, kitchens and baths, existing and proposed: -

Latrines/Baths/Urinals/Kitchen							
Existing	..	..	..	..	..	..	..
Proposed	..	..	..	..	..	..	..

12. The source of water to be used in the construction

13. Distance from the sewer

14. How much municipal land will be used for stacking building material?

I hereby declare that I am the owner-lessee/mortgage in possession/.....of the plot on which the work is proposed and that the statement made in this from are true and correct to the best of my knowledge.

Date:

Address:

Signature of the owner.

From of certificate to be signed by the licensed Architect/Engineer/Structural engineer/ Supervisor employed by the owner:

I (name).....have been employed by the applicant as his licensed Architect/Engineer. I have carefully perused his covenant or conveyance in respect of his plot and examined and surveyed the boundaries and the area of the plot and I do hereby certify that I have personally verified and checked all the statements made by the owner who is the owner-leasee/mortgagee in possession/ of the plot and in the above from and found them to be correct.

Date:

Address:
Architect/Engineer/

Signature of licensed

Structural Engineer/supervisor.

APPENDIX B
(Byelaw No.6.2.9.)
From for supervision.....

To

The Authority
Municipal Council of*

Sir,

I hereby certify that the development work/erection/re-erection/demolition or material alteration in/of building No.....on/in plot No.....in C.T.S.No.....situated at street/road.....City No.....shall be carried out under my supervision and I certify that all the materials (type and grade) and the workmanship of the work shall be generally in accordance with the general specification submitted along with, and that the work shall be carried out according to the sanctioned plans. I shall be responsible for the execution of work in all respects.

Signature of Licensed Architect/engineer/structural Engineer/Supervisor

.....

Name of Licensed Architect/Engineer/Structural Engineer/Supervisor

.....

License No. Of Licensed/Architect/Engineer/Structural Engineer/Supervisor

.....

(In block letters)

Address of Licensed Architect/Engineer/Structural Engineer/Supervisor

.....

.....

Date

*Name of 'A' class Municipality.

APPENDIX C
(Byelaw No.6.5)

Qualifications of Licensed Technical Personnel for preparation of scheme for building permit and supervision

C.1. GENERAL

C.1.1. The Qualifications of the technical personnel and their competence to carry out different jobs for building permit and supervision for the purpose of licensing by the authority shall be as given in byelaws c-2to c-5. The procedure for licensing the technical personnel is given in byelaw c-6.

C.2. ARCHITECT

C.2.1. Qualifications. - The qualifications for licensing of architect will be the associate membership of the Indian institute of architect or such degree or diploma which makes him eligible for such membership or such qualification listed in schedule XIV of architect act, 1972 and shall be registered under the councils of architect as per architect act, 1972.

C.2.2. Competence. - The licensed architect shall be competent to carry out work related to building permit, as given below and shall be entitled to submit: -

- (I) All plans and related information connected with building permit;
- (II) Structural details and calculations for buildings on plots up to 500sq. m. and up to 3 story or 11m; and
- (III) Certificate of supervision and complication for buildings in (it).

C.3. ENGINEER

C.3.1. Qualifications. - in civil or structural engineering, which make him eligible for such The qualifications for licensing of engineer will be the corporate membership (civil) of the institution of engineers or such degree or diploma membership.

C.3.2. Competence. - The licensed engineer shall be competent to carry out the work related to building permit as given below and shall be entitled to submit: -

- (I) All plans and related information connected with building permit;
- (II) Structural details and calculations for buildings up to 500sq. m. and 5 story (16m); and
- (III) Certificate of supervision and completion for all buildings.

C.4. SUPERVISOR

C.4.1. Qualifications. - The qualification for licensing of supervisor will be: -

- (I) Three years architectural assistantship or intermediate in architecture with two years experience;
- (II) Diploma in civil engineering with two years experience; or
- (III) Draftsman in civil engineering from I.T.I. with five years experience under architect/engineer.

C.5. STRUCTURAL ENGINEER

C.5.1. Qualifications. - Qualification for licensing of structural engineer shall be the following with minimum three years experience in structural engineering practice with designing and field work: -

- (I) Graduate in civil engineering of recognized Indian or foreign university and chartered engineer or associate member in civil engineering division of institution of engineers (India) or equivalent overseas institution;
- (II) Associate member in civil engineering division of institution of engineers (India) or equivalent overseas institution possessing exceptional merits.

The three years experience shall be relaxed to two years in the case of post-graduate degree of recognized Indian and foreign university in the branch of structural engineering. In the case of doctorate in engineering experience required would be one year.

C.5.2. Competence. - Structural engineer shall be competent to submit the structural details and calculations for all buildings and supervision.

C.5.2.1. In the case of complicated buildings and sophisticated structures as decided by the authority, which is within the horizontal areas and vertical limits under c-2.2. (II), Only structural engineers shall carry out C-3.2 (II) and C-4.2 (I) and (II) design shall be carried out only by structural engineers.

C.6. LICENSING

C.6.1. Technical Personnel to be licensed. - The qualified technical personnel as given in byelaws C-2., C-3., C-4., and C-5, shall be licensed with the authority and the license shall be valid for one calendar year ending 31 December after which it shall be renewed annually.

C.6.2. Fees for Licensing. - The annual licensing fees shall be as follows: -

For architects, engineers and structural engineers	Rs.250 per annum.
For supervisor S-I	Rs.100 per annum.
For supervisor S-II	Rs.50 per annum.

APPENDIX D

(Byelaw No.6.6.1.)

From for sanction of buildings permit and commencement certificate

To

.....
.....
.....

Sir,

With reference to your application No.....dated.....for grant to sanction of commencement certificate under section 45/69 of MR and TP act 1966 to carry out development work and building permit under section 189 of MM act 1965/to erect building in building No.....on/it plot No....., the C.T.S. No.....situated at road/street.....city No.....the commencement certificate/building permit is granted subject to the following conditions:

- 1. The land vacated in consequence of the enforcement of the set back rule shall from part of the public street
- 2. No new building or part thereof shall be occupied or allowed to be occupied or used or permitted to be used by any persons until occupancy permission has been granted.
- 3. The commencement certificate/building permit shall remain valid for a period one year commencing from the date of its issue.
- 4. This permission does not entitle you to develop the land which does not vest in you.
- 5.
- 6.
- 7.
- 8.

Office communication No.
AUTHORITY
Office stamp
Date

Yours faithfully,
THE

* Name of Municipal Council/Address

APPENDIX E

(Byelaw No.6.6.1.)

From for Refusal of sanction

(Under section 45/69 of MR and TP act 1966 and section 189 of M.M. Act 1965)

To

.....
.....
.....

Sir,

With reference to your application No.....dated.....for the grant of sanction for the development work/the erection of a building/execution of work in building no.....

Plot no.....block no.....situated at

.....
MOHALLA/road.....city no.....,I have to inform you that the sanction has been refused on the following grounds:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Yours faithfully,
The Authority

Office No.....
Office Stamp
Date.....

*Name of Municipal Council/address

APPENDIX F

(Byelaw No.7.2.)

From for Notice for Commencement of Works

To

The Authority
Municipal Council of*

.....
.....
Sir,

I hereby certify that the development work/erection/re-erection/demolition or material alteration or material alteration in/of building No.....on/in plot no.....C.T.S. no.....
Situating at.....street/road City no.....will be commenced on.....as per your permission via office communication no.....
Dated.....under the supervision ofLicensed Architect/Engineer/Structural Engineer/supervisor, License No.....and in accordance with the plans sanctioned.

owner..... Signature of
owner..... Name of
owner..... (In block letters)
Address of
owner.....
Date.....

*Name of Municipal Council/address.

APPENDIX G
(Byelaw No.7.4.)

From for Notice Commencement of Works

To
The Authority
.....*Municipal Council
.....
.....

Sir,
I hereby inform that the construction up to plinth/column up to plinth level has been completed in building no on/inplot No.....C.T.S. No.....situated at.....
Road/street.....City No.....as per your permission vide office communication no.....dated.....under my supervision and in accordance with the sanctioned plan.

The completed work may be checked and permission given to proceed with further works.

Signature of Licensed Architect/Engineer/Structural Engineer/Supervisor.....
Name of Licensed Architect/engineer/structural engineer/supervisor.....

(In block letters)

Address of licensed Architect/Engineer/Structural Engineer/Supervisor.....
Date.....

*Name of Municipal Council/address.

APPENDIX J
(Byelaw No.6.)

From for Completion certificate

To
The Authority
.....
.....
.....

Sir,
I hereby certify that the erection/re-erection or development work in/on building/part building No.....on/
In plot No.....C.T.S. No.....Situating atRoad/street

.....City No.....has been supervised by me and has been completed on.....according to the plans sanctioned, vide office communication No.....

Dated.....the work has been completed to my best satisfaction, the workmanship and all the materials (type and Grade) have been used strictly in accordance with general and detailed specifications. No provisions of the act or the building byelaws, no requisitions made, conditions prescribed or orders issued there under have been transgressed in the course of the work. I am enclosing three copies of the completion plans, one of which is cloth mounted. The building is fit for occupancy for which it has been erect/re-erected or altered, constructed and enlarged.

I have to request you to arrange for the inspection and give permission for the occupation of the building.

Signature of Licensed Architect/Engineer/Structural Engineer/Supervisor.....
Name of Licensed Architect/Engineer/Structural Engineer/supervisor.....
Address of licensed Architect/Engineer/Structural Engineer/Supervisor.....
Encl.: as above
Date.....

.....*Name of Municipal Council/address

APPENDIX H

(Byelaw No.7.4)

From for Approval of Work Up to Plinth Level

To
.....
.....
.....

Sir,

With reference to your intimation no.....dated.....regarding the completion of construction work up to plinth/columns up to plinth level in building no.....on/in plot no.....
On/in plot no.....C.T.S. No.....situated at.....
Road/street.....

City No.....I have to inform that the further work may be proceeded with as per sanctioned plans/shall not be proceeded with as the construction up to plinth level is not as per sanctioned plans.

Office Communication No.....
Office Stamp.....
Date.....

Yours faithfully,

The Authority

*

.....
.....
.....

.....*Name of Municipal Council/address.

APPENDIX K

(Byelaw No.7.7)

From For Occupancy certificate

To
.....
.....
.....

Sir,

This is to certify that the development work/erection/re-erection or alteration in/of building/part building No.....on/in plot No.....C.T.S. no.....Situating at
.....
Street/road.....City No.....Completed under the supervision of

.....
Licensed Architect/Engineer/Structural Engineer/Supervisor, License No.....is permitted to be occupied/not permitted to be occupied on the following grounds:

1.
2.
3.
4.

Office No.....
Office Stamp.....

Yours faithfully,
The Authority

Date.....

*

.....
.....

*Name of Municipal Council/Local Body

APPENDIX L

(Byelaw No.7.7.1.)

From for Indemnity for Part Occupancy Certificate
(On Stamp Paper)

To
The Authority,
.....**Municipal Council

Sub:

Sir,

While thanking you to allow me to occupy a portion of the above building before acceptance of the completion Certificate of the whole building for he plans approved under Communication No.....

Dated.....I hereby indemnify the Municipal Council against any risk, damage and danger which may occur to occupants and users of the said portion of building and also undertake to the necessary security measure for their safety. We say that this undertaking will be binding on me/us, our heirs, and administrators and to our assignees.

Yours faithfully,
Owner

Witness:

*Of such value as decided by the authority.
**Name of Municipal Council/Address.

APPENDIX M

(Byelaw No.15.1.)

Land use classification and various building Occupancies/uses Permitted
M-1. RESIDENTIAL ZONE R1 (All residential area excluding R2)

Serial No.	Permissible
(I)	Any residences.
(II)	Customary Home occupation j. e. occupation conducted only by persons residing in the dwelling, the area for such use not exceeding 25 per cent of the total floor area dwelling of 20 square meters which ever is less and without any public display of goods.
(III)	Primary and Nursery schools.
(IV)	Religious Buildings.
(V)	Parks, playgrounds, Nurseries green houses.
(VI)	Swimming pools and Gymnasiums.
(VII)	Medical and Dental practitioners clinics and dispensaries.
(VIII)	Camping grounds organized by recognized agencies.
(IX)	Petty convenience shops for domestic needs of up to 6 square meters in area.
(X)	Ration shops not exceeding 15 square meters area.

- (XI) Police choky, civil deface office, home guard office and other offices serving the local area not exceeding 15 square meters area.
- (XII) Stables for domestic cattle up to 2 animals per plot.
- (XIII) Public conveniences.
-

APPENDIX P
(Byelaw No. 20.2.)

Additional fire portions requirements for buildings more than 15m in height but not more than 25m. and buildings as

Covered byelaw No. 6.2.6.1.

P.1. GENERAL

P.-1.1. In additions to the provisions of part IV fire portions of national buildings code of India, the competent fire authority as approved by the fire adviser to the government of Maharashtra may insist on suitable provisions in buildings from the fire safety and fire fighting point of view depending on the occupancy and height of buildings.

P.2. CONSTRUCTION

P.2.1. Buildings Materials

P.2.1.1. Load bearing elements of constructions of elements of construction for which the required fire resistance is one hour or more shall be of non-combustible material. Interior finish materials (wall paneling, floors coverings etc.) may be permitted of materials having their rating for flame spread and smoke developed not exceeding a very low flame spread limit in accordance with IS: 1642-1960 (class I). Ceiling linings shall be of non-combustible or of plasterboard.

P.2.1.2. Stairs and corridors shall not contain combustible materials.

P-2-2. Structural members such as supports and bearing walls shall have fire reentrance rating of 3 hours, transoms and ceilings 2 hours to 4 hours.

P-2.3. Internal walls and partitions (Fire sections) walls, separating corridors from areas of floor that are used for any purpose other than circulations shall have a fire resistance of not less than two hours. There shall be no opening in such walls other than for doors or delivery hatches with fire resistance not less than half an hour to one hour.

P.2.4. Facades shall consist of non-combustible buildings materials. A fire must bridge a distance of at least 0.9 meters between stores.

P-3. STAIRCASE ENCLOSURES

P.3.1. The internal enclosing walls of staircase shall be brick or R.C.C. construction having fire resistance of not less than two hours. All enclosed staircases shall have access through self-closing doors of at least half hour fire resistance. These shall be single swing doors opening in the direction of the escape. The door shall be fitted with check action doors closer.

P-3.2. The staircase enclosure on external wall of the building shall be ventilated to atmosphere at each landing.

P-3.3. Permanent vent at the top equal to 5 per cent of the cross sectional area of the enclosure and open able sashes at each foot level with area equal to 15 per cent of the cross sectional area of the enclosure on the external wall shall be provided. The roof of the shaft shall be at least 1m above the surrounding roof. There shall be glazing or glass bricks in any internal enclosing wall of a staircase.

P-4. LIFT ENCLOSURES

p-4.1. The walls enclosing lift shafts shall have a fire resistance of not less than two hours. Shafts shall have permanent vents at the top not less than 1800 sq. mm. In clear area. Lift motor rooms shall preferably be sited at the top of the shaft and shall be separated from lift shafts by the enclosing wall of the shaft or by the floor of the motor rooms.

P-4.2. Landing doors in lift enclosure shall open in the ventilated corridor/lobby and shall have fire resistance of not less than one hour.

P-4.3. The number of lifts in one lift bank shall not exceed four. Shaft for fire in a bank shall be separated from each other by brick masonry or R.C.C. wall of fire resistance of not less than two hours. Lift car doors shall have fire resistance of not less than one hour.

P-4.4. Exit from the lift lobby shall be through a self-closing stop door of half fire resistance.

P-4.5. The lift machine room shall be separate and no other machinery shall be installed therein.

P-4.6. Lifts shall not normally communicate with the basement. However, one of the lifts may be permitted to reach basement levels provided the lift lobby at each basement level is separated from the rest of the basement areas, by fusible link operated fire resisting door of two hours fire resistance.

P-4.7. Grounding switch/switches at ground floor level to enable the fire services personnel to ground the lift car/cars in an emergency shall be provided for buildings more than 15m in height.

P-4.8. External Windows. - In case of certainly air conditioned buildings area of the open able external windows on a floor shall be not less than Two and half per cent of the floor area. The locks for

these windows shall be fitted with budget lock of the carriage key type (which can be opened with the point of a fireman's axe).

P-5. LIFTS AND LIFTS

P-5.1. Provisions for a fire lift shall be made as per the following details in buildings more than 15 m only: -

- (a) To enable fire services personnel to reach to the upper floors with in the minimum delay, one of the lifts shall be also designed so as to be available for the exclusive use of the firemen in an emergency and be directly accessible to every dwelling/let table floor space on each floor.
- (b) The lift shall have loading capacity of not less than 450 kg (6 persons lift).
- (c) The electric supply shall be on separate services from electric supply mains in a building and the capable of changing run in a route safe from fire, that is, within the lift shafts. In case of failure of normal electric supply it shall be capable of changing over to alternate supply manually through a change over switch.
- (d) The operation of a fire lift is made by a simple toggle or two-button switch situated in a glass fronted box adjacent to the lift at the entrance level. When the switch is on, landing call-point will become inoperative and the lift will be on car control only. When switch is off, the lift will return to normal working. This lift can be used by the occupants in normal times.
- (e) The words "FIRE LIFT" shall be conspicuously displayed in fluorescent paint on the lift landing doors at each floor level.
- (f) For buildings above 15 m in height collapsible gates shall not be permitted for lifts and shall have solid door slip fire resistance of one hour.

P-6. BASEMENTS

P-6.1 Each basement shall be separately ventilated. Vents with cross sectional area (aggregate) not less than 2.5 percent of the floor area spread evenly round the perimeter of the basement shall be provided in the form of grilles or breakable glass panels lights or pavement light or by way of shaft.

P-6.2 The staircase of basement shall be enclosed type having fire resistance of not less than two hours and shall be situated at the periphery of the basement and shall communicate with basement through a lobby provided with fire resisting self-closing doors of one hour fire resistance. If the travel distance exceeds 18.15 m. additional stair case at proper place shall be provided

P-7 COMPARTMENTATION

If the uncomparted floor space on a floor exceeds 750 sq.m. it shall be separated with each compartment not exceeding 750 sq.m. By means of firewalls of not less than two hours fire resistance. For floors with sprinklers, the area maintained above may be increased by 50 percent.

P-8 SERVICE DUCTS

P-8.1. Service ducts for electrical conduits, cables etc. shall be enclosed by walls having a fire resistance of not less than two hours doors for inspection or access shall also fire resistance of not less than two hours.

P-8.2. If the cross sectional area exceeds 1 sq.m. It shall be sealed where it passes a floor by carrying the ducts through the floor. The floor within the ducts shall be tiered for any service pipe or ventilation trunk and shall be fit as closely as possible around any such pipe or trunk.

P-8.3. A permanent vent shall be provided at the top of the services shaft of cross sectional area not less than 460sq.m. or 6.25 sq.m. For each 900 sq.m. Of the shaft whichever is more.

P-9. REFUSE CHUTES AND REFUSE CHAMBERS

P-9.1. Hoppers to refuse chutes shall be suited in well ventilated positions and the chutes shall be continued upward with an outlet above roof level and with an enclosure wall of non-combustible material with fire resistance not less than two hours. The hoppers shall not be located within the staircase enclosure.

P-9.2. Inspection panel and hopper (charging station) opening shall be fitted with tight fitting metal doors, having a fire resistance not less than one hour.

P-9.3. Refuse chutes shall be not being provided in staircase wells, air conditioning shafts, etc.

P-9.4. Refuse chambers shall have walls and floors or roofs constructed of non-combustible material and shall have a fire resistance of not less than two hours. They shall be located at a safe distance from exit routes.

P-10. BUILDINGS SERVICES

P-10.1. ELECTRICAL SERVICES

- (a) The electrical distribution cable/wiring shall be laid in separate duct (see byelaw No. P-8.1). The duct shall be sealed at every alternative floor with non-combustible, materials having the same fire resistance as that of the duct.
- (b) Water mains, telephone lines, inter-com lines, gas pipes or any other services line shall not be laid in the duct for electric cables.
- (c) Separate circuits for water pumps, lifts, staircases and corridor lighting shall be provided directly from the main switch gear panel and these circuits shall be laid in separate conduit pipes so fire in one circuit will not affect the others.

- (d) The inspection panel doors and any other opening in the shaft shall be provided with airtight fire doors having the fire resistance of not less than two hours.
- (e) Medium and low voltage wiring running in shafts, and within false, ceiling shall run in metal conduit.
- (f) An independent and well-ventilated services room shall be provided on the ground floor with direct access from outside or from the corridor for the purpose of termination of electric supply from the licensees' service and alternate supply cable. The doors provided for the services room shall have fire resistance of not less than two hours.
- (g) If the licensees agree to provide meters on upper floors, the licensees' cables shall be secreting from consumers cable by providing a partition in the duct.

P-10.2. TOWN GAS/L.P.GAS SUPPLY PIPES:

When gas pipes are run in the building, the same shall be run in separate shafts exclusively shafts exclusively for this purpose and these shall be on external walls, away from the staircases. There shall be no interring connection of these shafts with the rest of the floors.

P-10.3. STAIRCASE AND CORRIDOR LIGHTINGS:

- (a) The staircase and corridor lighting shall be on separate service and shall be independently connected so as it could be operated by one switch installation on the ground floor easily accessible to fire fighting staff at any time irrespective of the position of the individual control of the light points if any.
- (b) Staircase and corridor lighting shall also be connected to alternate source of supply as defined in Byelaw No.P-10.4.
- (c) Suitable arrangements shall be made by installing double throw switch shall be installed in the service room for terminating the stand by supply.
- (d) Emergency lights shall be provided in the staircase/corridor, in the case of assembly and institutional buildings only.

P-10.4. ALTERNATE SOURCE OF ELECTRIC SUPPLY:

A stand-by electric generator shall be installed to supply power to staircase and corridor lighting circuits, fire lifts, the stand-by fire pump smoke extraction and damper system in case of failure of normal electric supply. The generator shall be capable of taking starting current' of all the machines and circuits stated above simultaneously. If the stand-by pump. Where parallel HV/LV from a supply from a separate sub-station is provided with appropriate transformer for emergency, the provisions of generator may be waived consultation with competent fire an authority as approved by the fire adviser to the government of Maharashtra.

P-10.5. TRANSFORMERS:

- (a) If transformers are housed in the building below the ground level it shall be necessary in the first basement in separate fire reinstating room of 4 hours rating. The room shall necessarily be at the periphery of the basement. The entrance to the room shall be provided with a steel door of 2 fours fire rating. A curb a suitable height shall be provided at the entrance in order to prevent the flow of oil from returned transformer in to other parts of the basement. The direct access to the transformer room shall be provided preferably from outside. The switchgears shall be housed in a separate room separated from the transformer bays by a fire-resisting wall with fire resistance not less than fours hours. The transformer shall be housed protected by an automatic high-pressure water spray (emulsifier) system.
- (b) In case the transformers housed in the basements are totally segregated from other areas of the basements by 4 hours fire resisting wall/walls with an access directly from outside, it may be protected by carbon dioxide fixed installation system.
- (c) When housed at ground floor level it/they shall be cut off from the other portions of premises by fire resisting walls of 4 hours fire resistance.
- (d) They shall not be housed on upper floors.
- (e) A tank of RCC construction of capacity capable of accommodation entire oil of the transformers shall be provided at lower level, to collect the oil from the catch-pit in case of emergency. The pipe connecting the catch-pit to the tank shall be non-combustible construction and shall be provided with a flame-arrester.

P-10.6. AIR-CONDITIONING:

- (a) Escape routes like staircases, common corridors, lift lobbies etc. shall not be used as return air passage.
- (b) The ducting shall be constructed for gauge metal in accordance with IS: 655-1963 (Revised).
- (c) Where the ducts pass through firewalls or floors the opening around the ducts shall be sealed with fire resisting materials such as asbestos rope, vermiculite concrete, glass wool, etc.
- (d) As far as possible metallic ducts shall be used even for the return air instead of space above the false ceiling.
- (e) The materials used for insulating the duct system (inside or outside) shall be non-combustible material such as glass wool etc.

- (f) Area more than 750 sq.m. On individual floor shall be segregated by firewall and automatic fire dampers for isolation shall be provided where the ducts pass through firewalls. The fire dampers shall be capable of operating manually.
- (g) Air ducts serving main floor areas, corridors, etc. shall not pass through the stair well.
- (h) The air handling units shall as far as possible be separate for each floor and air ducts for every floor shall be separate and in no way interconnected with the ducting of any other floor.
- (i) If the air-handling unit serves more than one floor, the recommendations given above shall be complied with in addition to the conditions given from j to O.
- (j) Proper arrangements by way of automatic fire dampers working on smoke detectors for isolating all ducting at every floor from the main riser shall be made.
- (k) When the automatic fire alarm operates the respective air handling units of the air-conditioning system shall automatically be switched off.
- (l) Automatic fire dampers shall be provided at the inlet of the fresh air duct, and the return air duct of each compartment/ shop on every floor.
- (m) Automatic fire dampers shall be arranged so as to close by gravity in the direction of the air movement and to remain tightly closed up on operation of a smoke detector.
- (n) The air filters of the air-handling units shall be of non-combustible materials.
- (o) The air handling unit room shall not be used for storage of any combustible materials.

P-10.7. BOILER ROOM:

Provisions of boiler and boiler rooms shall conform to Indian boiler act. Further, the following additional aspects may be taken into account in the locations of boiler/boiler room.

- (a) The boilers shall not be allowed but may be allowed in the basements away from the escape routes.
- (b) The boilers shall be installed in fire resisting room of 4 hours fire resistance rating, and this room shall be situated on the periphery of the basement. Entry to this room shall be provided with a composite door of hour hours fire resistance. Catch pits shall be provided at the low level.
- (c) The boiler room shall be provided with fresh air inlet and smoke exhausts directly to the atmosphere.
- (d) The furnaces oil tank the for the boiler if located in the adjoining room shall be separated by fire resisting wall of four hours rating. The entrance to this room shall be provided with double composite doors. A curb of suitable height shall be provided at the entrance in order to prevent flow of oil in to the boiler room in case of tank rupture.
- (e) Foam inlets shall be provided on the external walls of the buildings about two feet above the ground floor level in a box to enable the fire services to use foam in case of fire.

P-11. PROVISION OF FIRST AND FIRE FIGHTING APPLIANCES

P-11.1. The first aid fire fighting equipments shall be provided on all floors including basements, occupied terraces, lift rooms in accordance with IS: 2217-1963 recommendations for providing first-aid fire arrangements in public buildings in consultation with the competent fire authority as approved by the fire adviser to the government of Maharashtra.

P-12. FIXED FIRE FIGHTING INSTALLATIONS

P-12.1. The wet riser-cum-down comers installations with capacity of water storage tanks and fire pumps shall conform to the requirements as specified in the table.

Sr. No.	Type of the building/occupancy	Type of Installation	Water supply		Pump capacity		
			Underground	Terrace	Near the	at the	
(1)	(2)	(3)	Static tank (4)	tank (5)	Underground (6)	level (7)	
1.	Apartment buildings below 15m. in height irrespective of the floor area.	Nil	Nil	Nil	Nil	Nil	Nil
2.	Apartment buildings and educational Buildings exceeding 15 m but not Exceeding 24 m.	Wet riser-cum-down comer.	50,000 liters.	10,000 liters.	1000 liters per Minute giving a pressure not less than 2.1 kg/cm.	250 liters per minute pressure not Than 1.5 Topmost hydrant	at the level

3. Non-apartment buildings more than 15m. per	Do.	75000 liters	20,000 liters.	1350 liters per	450 liters
Exceeding 24m. in height irrespective of giving a				minute giving a	minute
Floor area and those occupancies failing less				pressure not less	pressure not
Area and those occupancies falling under kg/cm at				than 3.2kg/cm at	than 2.1
Clauses p-13.1.1.and 13.2.1 hydrant.				the topmost hydrant	the topmost

Note 1. - Any of the above categories may incorporate an automatic sprinkler/drencher system, if the risk is such that requires installation of such protective methods.

Note 2. - Minimum of two hydrants shall be provided within the courtyard, the location of which shall be decided in consultation with competent fire authority as approved by the fire adviser to the government of Maharashtra.

Note 3. - Wet riser-cum-down comer is an arrangement for fire fighting within the building by means of vertical pipes not less than 10.16 cm. dia. With hydrant outlets on each floor/landing connected to an overhead water storage tank for fire fighting purpose through a booster pump, gate valve and a non-return valve near the tank-end a fire pump, gate and non-return valves over the underground static tank. A fire service inlet at ground level fitted with a non-return valve, shall also be provided to the rising main for charging it through fire service pumps in case of failure of static fire pump over the underground static tank.

Note 4. - The pumps specified above shall not exceed 2000 R.P.M.

Note 5. - In case of group housing of apartment building 15 m. and above in height but below 24m. a centrally located tank having a capacity of 2,00,000 liters shall be provided.

Note 6. - The above quantities of water shall be exclusively for the fire fighting and shall not be utilized for domestic or other use.

P-12.1.1. In addition to wet riser-cum-down comers fire-aid hose reels shall be installed on all the floors of the buildings falling under Byelaw No.P-13.1.1. and 13.1.2. and shall conform to IS-884-1969 specification for fire-aid hose reel for fire fighting (fixed installations). The fire-aid hose reel shall be connected to one of the female couplings of twin couplings of landing valves of the wet riser installations by means of adapter.

P-12.1.2. STATIC WATER STORAGE TANK

A satisfactory supply of water for the purpose of fire fighting shall always be available in the form of underground static storage tank and tank at terrace level with capacities as specified under byelaw No.P-12 for each building by the local fire authority with arrangements of replenishment by town's main or alternative source of supply at 1,000 liters per minute. The static storage water supply required for the above mentioned purposes should be accessible to the fire engines of the local fire services. Provision of suitable number of manholes shall be made available for inspection, repairs and insertion of suction hose etc. The covering slab shall be able to withstand the vehicular load of 12 tones.

P-12.1.3. To prevent stagnation of water in the storage tank, the suction tank of the domestic water supply shall be fed only through an overflow arrangement to maintain the level there in at the minimum specified capacity and a baffle wall (see on text page) should also be provided to the static water storage tank.

P-12.1.4. The static water storage tank shall be provided with a fire brigade collecting breaching with 2 Nos. 65mm.dia. Instantaneous male inlets arranged in a valve box at a suitable point at street level and connected to the static tank by a suitable fixed pipe not less than 10.16 cm. dia. To discharge water in to tank when required at a rate of 1,000 liters per minute.

P-12.1. AUTOMATIC SPRINKLERS

Automatic sprinklers shall be installed: -

(a) In basements, which are used as car parks, storage of combustible article, laundry etc. if the area exceeds 500 sq. m.

(b) On floors used as departmental stores, shops and trades involving fire risks exceeding 1,125 sq.m.

P-12.3. AUTOAMTIC HIGH PRESSURE WATER SPRAY (emulsifier system)

This system shall be provided for protection of indoor transformers of sub-stations in basement area.

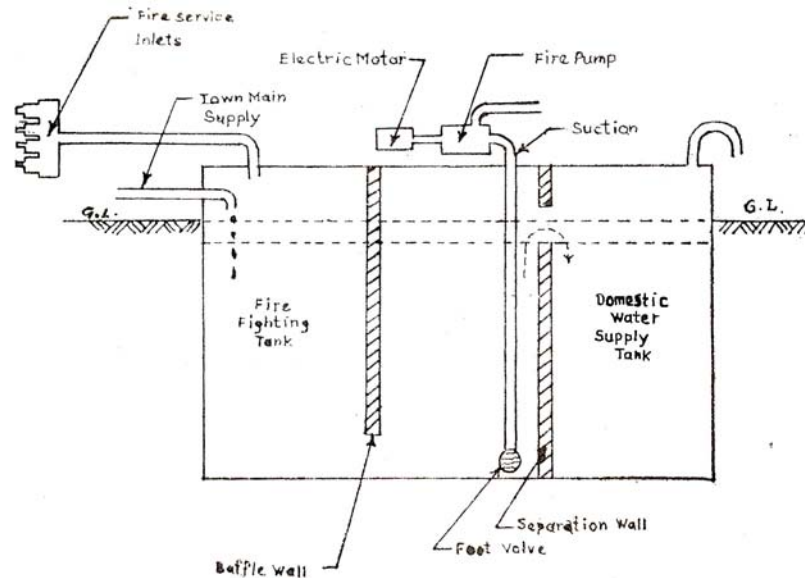


Fig ARRENGMENT FOR PROVIDING COMBINED
FIRE FIGHTING AND DOMESTIC WATER
STORAGE TANK AS PER BYE-LAW
NO. P-12.1.3

P-12.4. FOAM GENERATING SYSTEM

This system shall be provided for protection of boiler with its ancillary storage of furnaces oils in basement.

P-12.5. CARBON-DI-OXIDE FIRE EXTINGUISHING SYSTEM

Fixed co fire extinguishing installations shall be provided as per IS: 6382-1971 code of practice for design and installation of fixed fire extinguishing system on premises where water or foam cannot be used for fire extinguishments because of the special nature of the contents of the buildings/areas to be protected.

P-13. FIRE ALARAM SYSTEM

P-13.1. All buildings specified in Byelaw No.P-13.1.1. And 13.1.2. Exceeding 15m. in height except residential buildings shall equipped with fire alarm.

P-13.1.1. ASSEMBLY BUILDINGS, INSTITUTIONAL BUILDINGS AND INDUSTRIAL BUILDINGS

- Such buildings shall be equipped with normally operated electrical fire system with one or more coil boxes located at each floor. The locating of shall be decided after taking in to consideration the floor plan with view to ensure that one or the other call box shall be readily accessible to occupants of the floor without having to travel more than 22.5m.
- The call boxes shall be of the 'break-glass' type without any moving parts, where the shall be transmitted automatically to the control room without any other actions on the part of the persons operating the call box.
- All call boxes shall be wired in case circuits to a control panel in the control room located as per byelaw No.P-14 so that the floor no from where the call box is actuated is indicated on the control panel. The circuit shall also include one or more batteries with a capacity of 48 hrs. Normal working at full load. The battery shall be arranged to be continuously trickle charged from the electric mains.
- The call boxes shall be arranged to sound one or more sounders as to ensure that all occupants of the buildings shall be warned whenever any callbox is actuated.
- The call boxes shall be so installed that they do not obstruct the exist ways and yet their location can easily be noticed from either direction. The case of the call box shall be at height of 1.5m from the floor level.

P-13.1.2. BUSINESS AND STORAGE AND HAZARDOUS BUILDINGS OTHER THAN THOSE CLASSIFIED UNDER P-13.1.1.

These buildings shall , in additions to the manually operated electrical fire alarm system, be equipped with an automatic fire alarm system . The latter shall be addition to the alarm, which may be the actuation of any automatic fire extinguishing system which may be installed in any particular occupancy in accordance with these byelaws. The detectors for the automatic fire alarm system shall conform relevant Indian standard specifications for heat/smoke sensitive type fire detectors and the system shall be installed in accordance IS: 2189-1962 code of practice for automatic fire alarm system, or any other relevant Indian standard prepared from time to time.

Note. - Several types of fire detectors are available in the market but the applications of each type is limited and has to be carefully considered in relation to the risk and the structural features of the buildings where they are to be installed.

P-14. CONTROL ROOM:

P-14.1. There shall be a control room on the entrance floor of the buildings with communications system to all floors and facilities for receiving the message from different floors of Business, Assembly, and institutional and industrial buildings. Details of all floor plans along with the details of fire fighting equipment and installations shall be maintained in the control room. The control room shall also have facilities to detect the fire on any floor through indicator boards connecting fire detecting and alarm systems on all floors. The staff in charge of control room shall be responsible for the maintenance of the various services and fire fighting equipment and installations.

P-15. HOUSE KEEPING

P-15. To eliminate fire hazards a good house keeping inside the buildings and outside the buildings shall be strictly minted by the occupants and/or he owner of the building.

P-16. FIRE DRILLS AD FIRE ORDERS:

P-16.1. Fire notices/order shall be prepared to fulfill the requirements of the fire fighting and evacuation from the buildings in the event of fire and other incidents. The occupants shall be made thoroughly conversant with their action in the event of the emergency by displaying fire notices at vantage points. Such notices should be displayed prominently in board lettering.

APPENDIX Q

(Byelaw No.21.2)

Mammograms for Masonry Walls

Q-1. GENERAL:

Q-1.1. The thickness of masonry walls for residential buildings with class 200 (200kg/m loading) Business (office) buildings with class 300 (300kg/m) and class 400(400kg/m) loading for various combinations of masonry unit and mortar used stored heights spans percentage of openings and as applicable to internal and external walls shall as given in the monograms given in fig. 1A to fig. 1H.

The monograms shall be applied as given in byelaw no.q-2.

Q-2. PROCEDURE FOR MAKING USE OF MONOGRAMS:

Q-2.1. Permissible Stresses. - The permissible compressive stresses recommended in table apply to masonry consisting of squared units built to horizontal courses with broken vertical joints. The permissible compressive stress for masonry is given for any combination of the masonry unit has known crushing strength and motors of known mix.

Q-2.2. MINIMUM CALCULATED THICKNESS OF WALL:

Q-2.2.1. General. - The thickness of masonry walls for the following spans, stored heights and openings, given by monograms (see fig. 1) are worked out for three occupancies: -

Occupancy	Live loading	Refer to Figure No.	Height of rooms in m	Spans of rooms in m	Per. Of Openings
(a) Residential Buildings	200 kg/m	1A and 1B	2.8 and 3.2	3.0, 3.6 and 4.2	0 to 5
(b) Business (office) Buildings	300 kg/m	1C, 1D and 1E	3.0, 3.4 and 3.8	3.0, 3.6 and 4.2	0 to 5
(c) Business (office)	400 kg/m	1F, 1G and 1H	3.0, 3.4 and 3.8	3.0, 3.6 and 4.2	0 to 5

Table basic compressive stresses for masonry members

(At and after the stated Times)

Sr. no.	Description Of mortar	Mix (parts by volume)					Hardening Time after Completion	Basic stress in kg/cm corresponding to masonry units with crushing strength (kg/cm)									
		Cement	Lime (see Not 5)	Lime Pozzo Lana mixture (see note 6)	Pozzo sand	land		of work	35	70	105	140	175	210	280	350	440
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
(i) Cement	1	0.1/4C*	..	..	3	7	3.5	7.0	10.5	12.5	14.5	16.5	21.0	25.0	30.5	
(ii) Cement	1	1/2C*	..	..	4.1/2	14	3.5	7.0	10.5	11.5	13.0	14.5	17.5	21.5	25.0	
(iii) Cement-lime	1	1C	..	..	6	14	3.5	7.0	10.0	11.0	12.0	13.0	16.0	19.0	22.0	
(iv) Cement-lime	1	2B	..	..	9											
(v) Cement	1	..	..	..	6	14	3.5	5.5	8.5	10.0	11.0	12.0	14.5	16.5	19.0	
(vi) Lime-pozzolana Mixture	..	..	1	..	1.1/2											
(vii) Cement-lime	1	3B or C	..	..	12	14	2.5	5.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0	
(viii) Hydraulic lime	..	1A	1	2	14	2.5	5.0	7.0	8.0	9.0	10.0	12.0	14.0	16.0			
(ix) Lime pozzolana	1C		1	2													
(x) Lime	1B			3	28	2.5	4.0	5.5	6.0	6.5	7.0	7.5	8.5	9.5			

* The inclusion of lime in cement mortars is optional.

Note 1. - This table is valid for slenderness ratio 6 and the loading with zero eccentricity.

Note 2. - Linear interpolation is permissible for units whose crushing strengths are intermediate between those given in the table.

Note 3. - It is advisable to use plasticizers for cement mortars in order to improve properties of the mortar such as flow and water retentivity. Plasticizers should be used according to manufacturer's instructions.

Note 4. - Masonry cement mortars are also advisable and shall be used according to manufacturer's instructions. The mix proportions of masonry cement sand shall be such as to give comparable mortar crushing strengths with the cement lime sand mortar or cement sand mortar of the particular grade.

Note 5. - Lime classification (classes A, B and C) and building lime shall conform to IS: 712-1973 specifications for building limes (second revision).

Note 6. - For mortar under serial no. (VI) lime puzzling shall be conforming to IS: 4098-1967 specifications for lime puzzling mixture

Note 7. - These periods should be increased by the full amount of any time during which the air temperature remains below 4.5 C. plus half the amount of any time during which the temperature is between 4.5 and 10.C.

Q-2.2.2. The thick nesses are calculated for the different strengths of masonry (brick and mortar) available in the country [See IS-1077-1976 specification for common burnt clay building bricks (third revision)].

Q-2.2.3. Masonry thick nesses are calculated for buildings up to six stores in height both for interior and exterior walls.

Q-2.3. Structure of the Monograms. - The monograms for thickness of bricks wall consist of nine vertical lines. From left to right, the vertical lines represent the basic stress, stores, reference line 1, spans point, reference line 2, and percentage of opening and thickness of walls for spans of 3.0, 3.6 and 4.2 m; details of which are given below: -

(a) **Basic stress.** - The basic stress of masonry depending on the crushing strength of masonry unit (brick) and mortar used is indicated on the first vertical line. Table gives the basic stress for known values of crushing strength of the masonry of the unit and the mortar used. Linear interpolation between the limits is permitted.

(b) **Stores.** - The second line lists the number of stores of the masonry building for which the thickness of brick wall are available. Masonry thick nesses are arrived at for buildings up to six stores in height. For use of monograms in the case of multistoried buildings, the wall thickness at each floor is found by passing the line through the number of stores above that section. For example, in a four-stored building the thickness of wall at the ground floor (floor 1) is founded by passing the line through '4' on the stores line. Similarly, for floor 2, the line shall be passed through '3' on the stores line; for floor 3, the line shall pass through '2'.

(c) **Reference line 1.** - This reference line fixed a point on the line for any combination of values for basic stress and stores.

(d) **Spans point.** - The fourth line has a spans point, through which all lines shall pass through for arriving at the thickness.

(e) **Reference line 2.** - This reference line also fixes a point on the line for any combination of values for basic stress and stores.

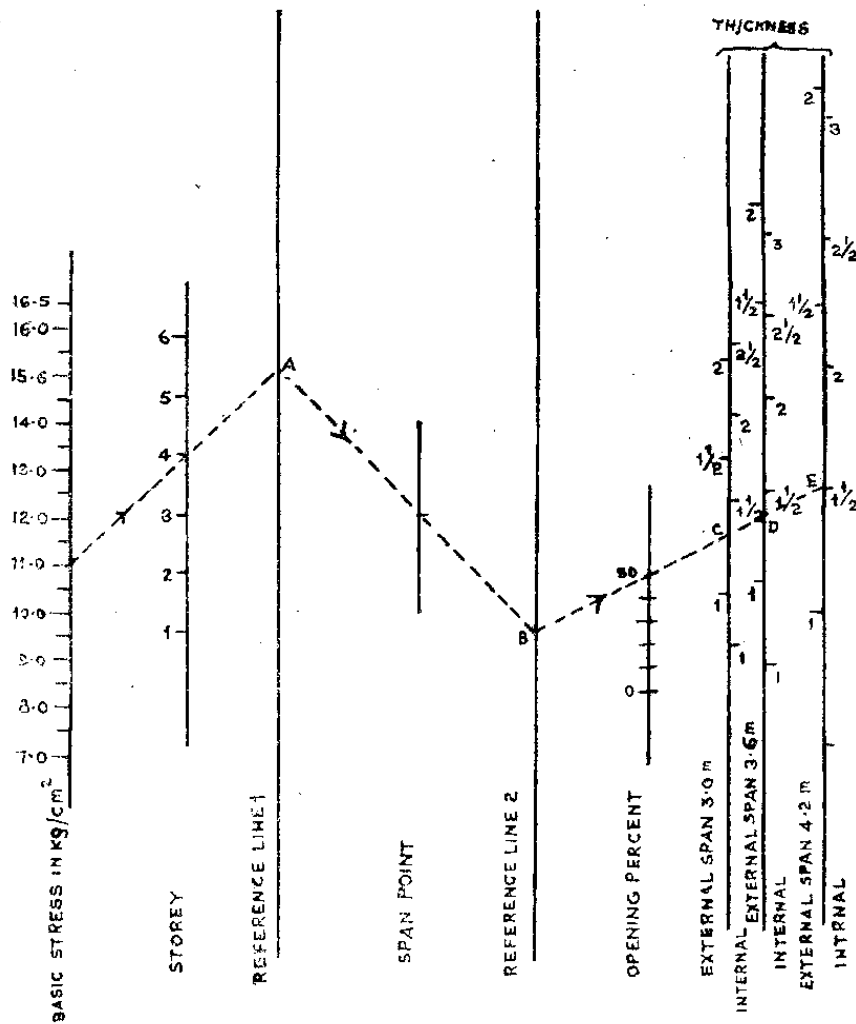
(f) **Percentage of opening.** - The opening provided on the walls for windows, ventilators, doors, shelves, etc. are taken care of in the monograms by this line. Window height is taken as 1.5 m. for calculations. Openings, which occupy up to 50 per cent of the area of wall under considerations, come under the purview of the monograms.

(g) **Thickness.** - The last three lines in any monograms give of thickness of bricks wall for a particular loading and stores height. The three sets of thickness are for three spans of the rooms namely, 3.0, 3.6 and 4.2 m. Thickness are indicated on both sides of the lines. The bold markings on the left side of the lines give the thickness for external walls and the dotted markings on the right side of the lines give the thickness for internal walls. Internal walls are analysed as walls having spans on either side. The numbers 1, one and half, 2, etc. on these lines indicate the (Number of) bricks thickness; for example, 1 indicates 1 brick thick. The calculations are valid for the common burnt clay building bricks conforming to IS: 1077-1976.

Q-2.4. Procedure for Use. - The representative dotted lines give in fig. 1A give the method of arriving at the thickness of the wall at ground floor (floor 1) in a four-stored building for known parameters. The following procedure shall be followed for interpreting the monograms:

In the example given in fig. 1A, the dotted line starts from 11.0 on the 'Basic stress line' and connects with 4 on the 'Stores line', the extension of which cuts 'Reference line 1' at A. Point A is connected through 'Spans point' to cut 'Reference line 2' at B. Point B is joined with '50' on 'Opening-per cent line' which when extended intersects the 'Thickness lines' at C, D and E. The thickness of the wall shall be the value of the dividing line, which appears immediately above the point of intersection on the 'Thickness line'. For example, in fig. 1A, for the points of intersection C, D and E, the following thickness are obtained:

	Point					Spans	Thickness (In Brick Thickness)	
						M.	External	Internal
C	3.0	One and half	One and half
D	3.5	One and half	One and half
E	4.2	One and half	One and half

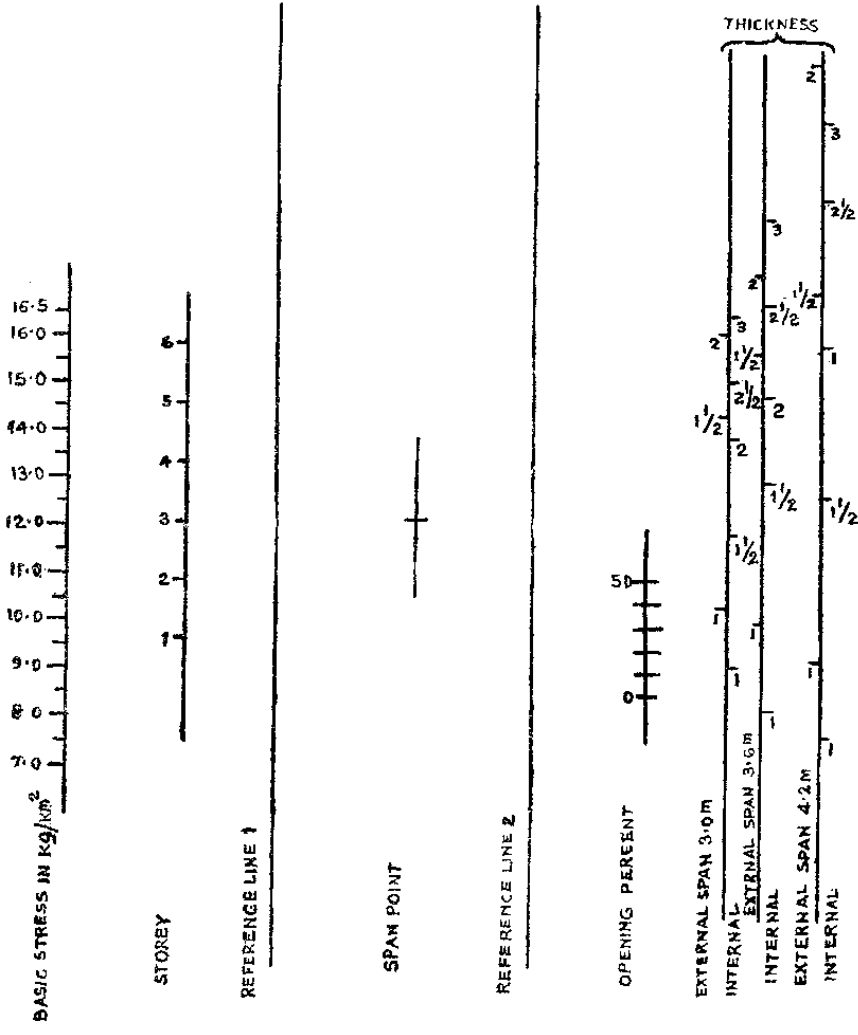


THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS

- i) BUILDINGS (RESIDENTIAL)
 - LIVE LOADING 200 Kg/m²
 - DEAD LOADING (ASSUMED) 415 Kg/m²
- ii) STOREY 2.8 m

IA FOR RESIDENTIAL BUILDING (CLASS 200 LOADING) WITH 2.8M STOREY HEIGHT

FIG. 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS

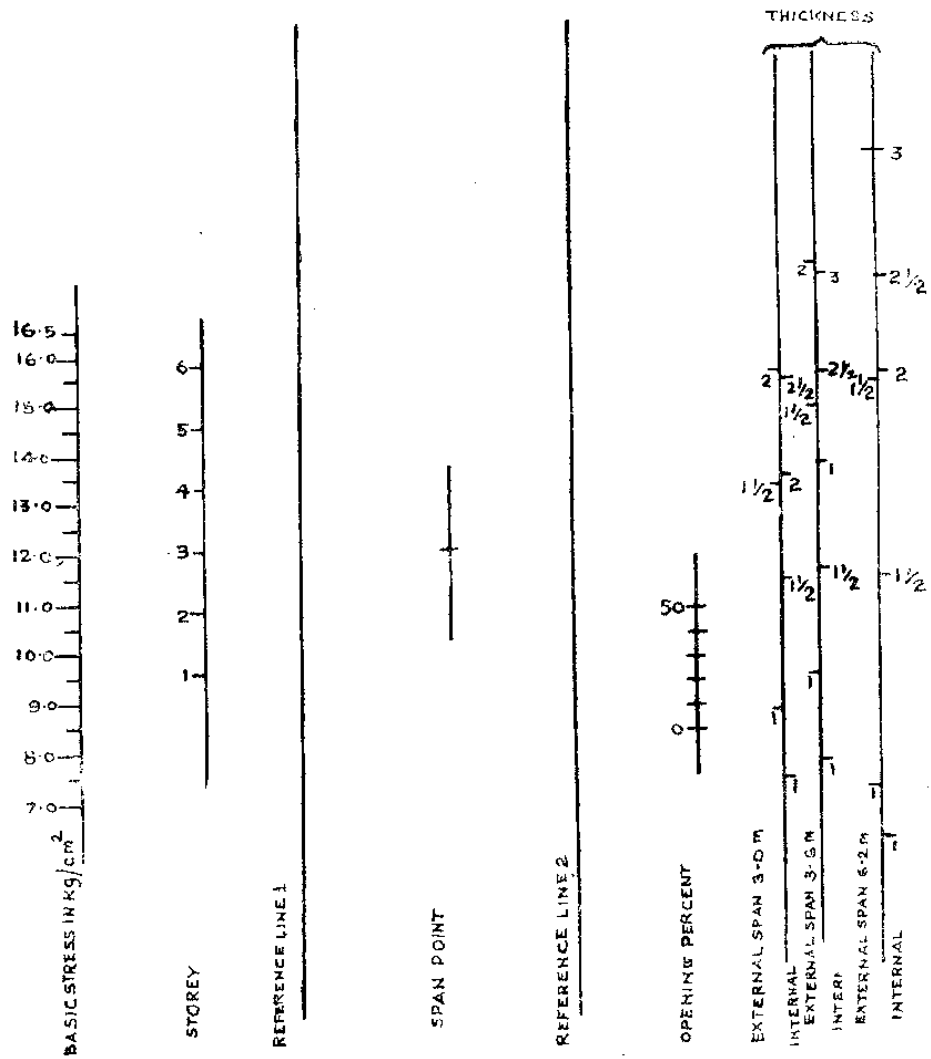


THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITION

- i) BUILDING (RESIDENTIAL)
 - LIVE LOADING 200 kg/m²
 - DEAD LOADING (ASSUMED) 215 kg/m²
- ii) STOREY HEIGHT 3.2 m

1B FOR RESIDENTIAL BUILDING (CLASS 2001 LOADING) WITH 3.2 M STOREY HEIGHT

FIG 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS

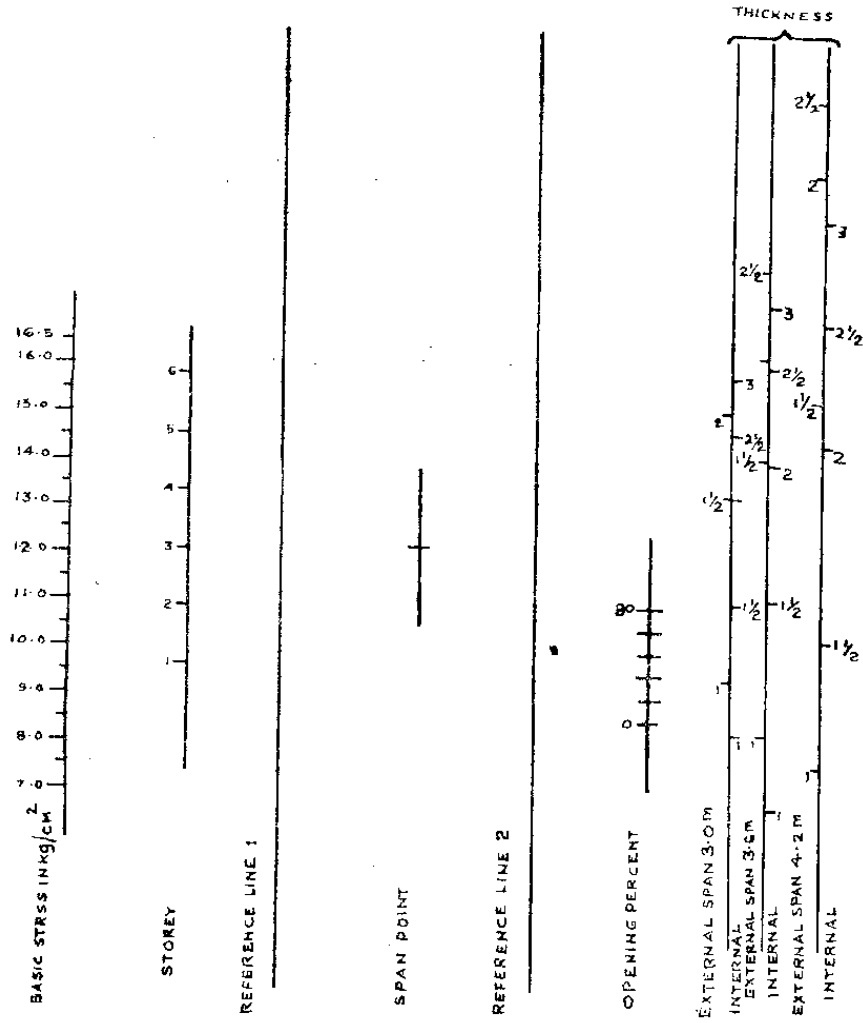


THIS NOMOGRAM IS VALID UNDER THE FOLLOWING CONDITIONS

- i) BUILDING (OFFICE)
 - LIVE LOADING 300 kg/m^2
 - DEAD LOADING (ASSUMED) 140 kg/m^2
- ii) STOREY HEIGHT 3.0 M

1 C FOR OFFICE BUILDINGS (CLASS 300/DA WITH 3.0 M STOREY HEIGHT

FIG. 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS

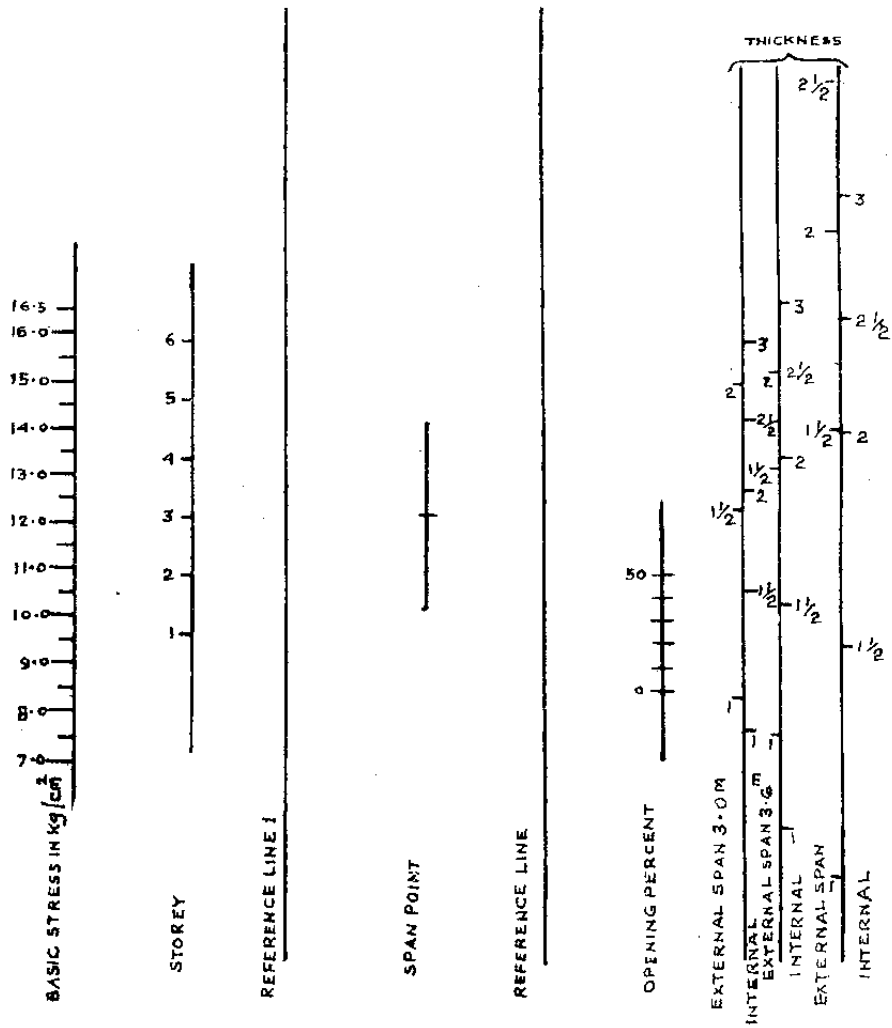


THE NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS

- i) BUILDINGS (OFFICE)
 - LIVE LOADING 300 kg/m²
 - DEAD LOADING (ASSUMED) 440 kg/m²
- ii) STOREY HEIGHT 3.4m

1) FOR OFFICE BUILDINGS (CLASS 300 LOADING) WITH 3.4 M STOREY HEIGHT

FIG 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS



THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS

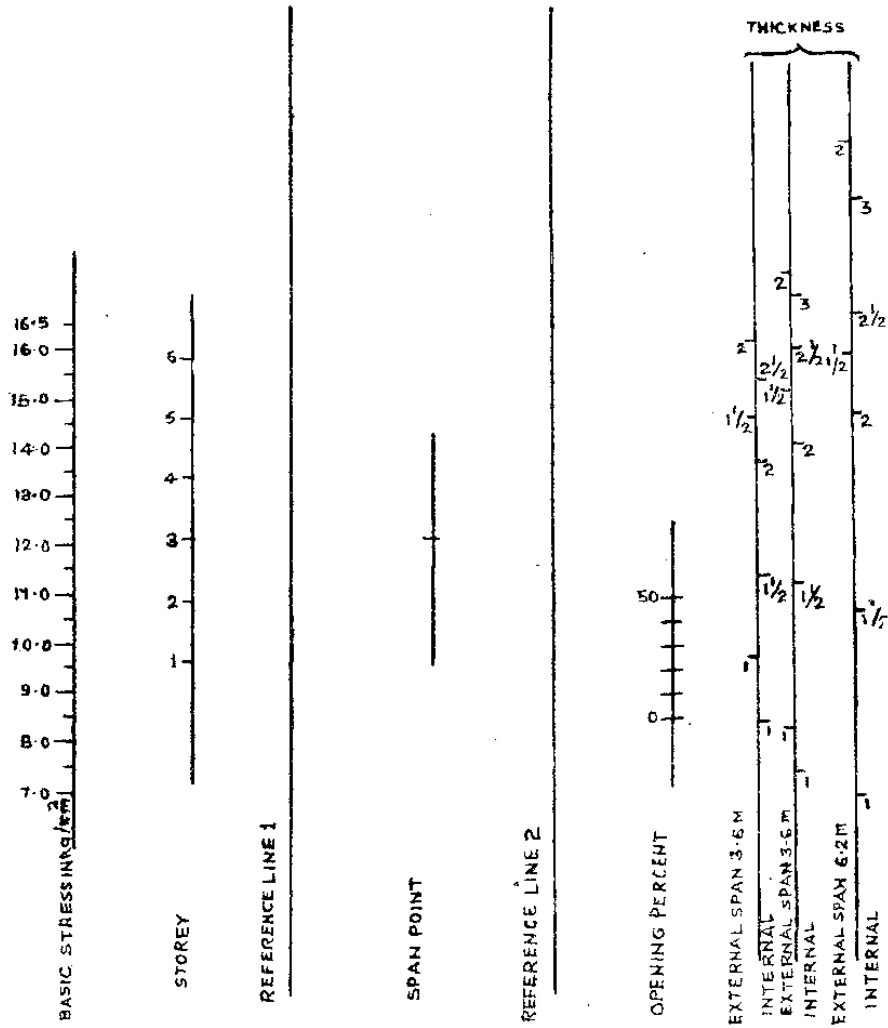
i) BUILDINGS (OFFICE)

- LIVE LOADING --- 300 KG/M²
 - DEAD LOADING (ASSUMED) --- 440 KG/M²

ii) STOREY HEIGHT 3-8 m

IE FOR OFFICE BUILDING (CLASS 300 LOADING) WITH 3-8 m STOREY HEIGHT

FIG. 1 NOMOGRAM FOR THICKNESS OF BRICK WALLS

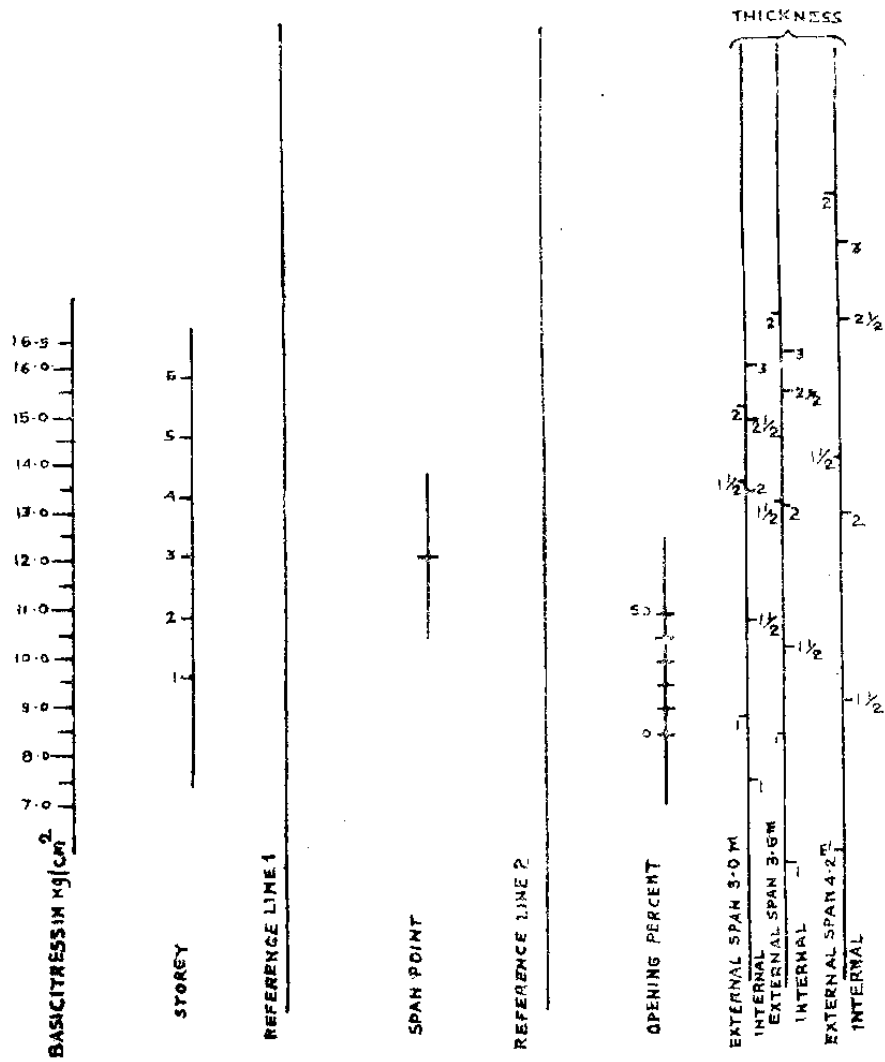


THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS:

- i) BUILDINGS (OFFICE)
 - LIVE LOADING 400 kg/m²
 - DEAD LOADING (ASSUMED) 490 kg/m²
- ii) STOREY HEIGHT 3.0M

IF FOR OFFICE BUILDING (CLASS 400 LOADING) WITH 3.0M STOREY HEIGHT

FIG 1 NOMOGRAM FOR THICKNESS OF BRICK WALL

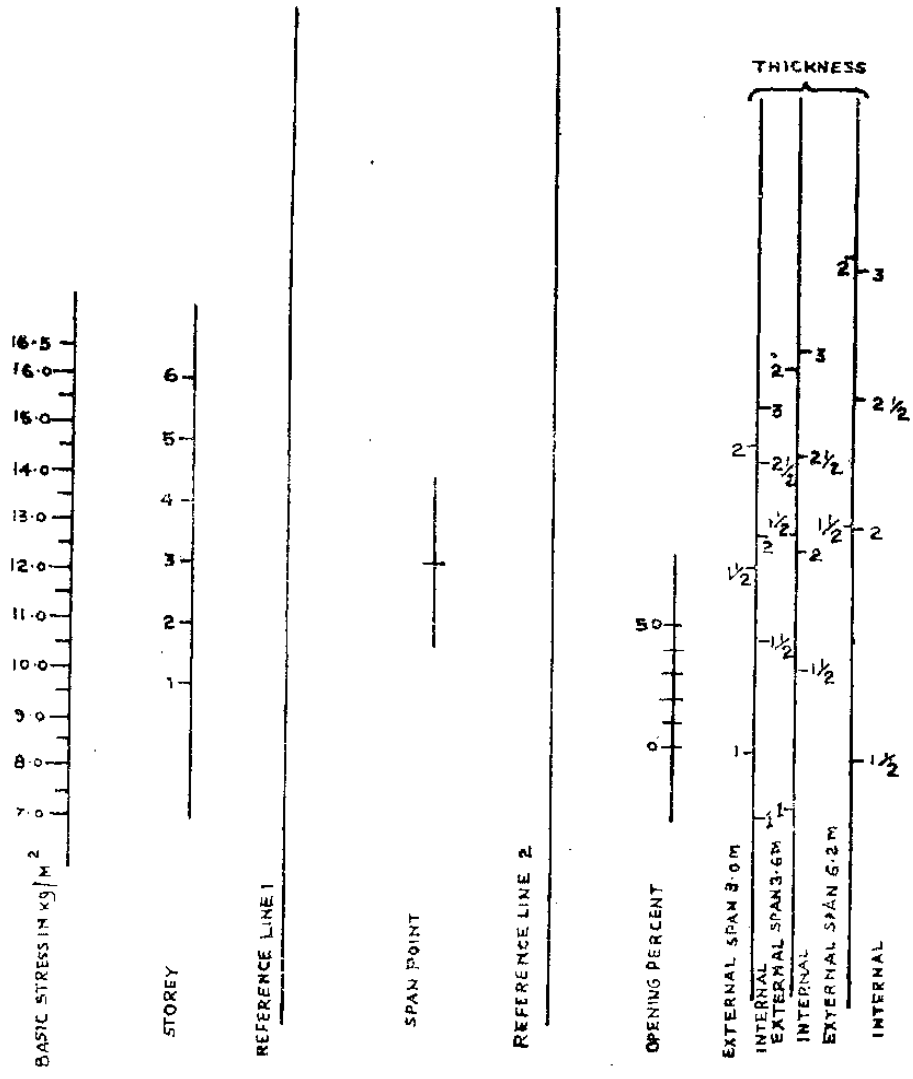


THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS

- i) BUILDING (OFFICE)
 - LIVE LOADING $400 \text{ kg}/\text{m}^2$
 - DEAD LOADING (ASSUMED) $490 \text{ kg}/\text{m}^2$
- ii) STOREY HEIGHT 3.4 m

16 FOR OFFICE BUILDINGS (CLASS 400 LOADING) WITH 3.4M STOREY HEIGHT

FIG. 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS



THIS NOMOGRAM IS VALID FOR THE FOLLOWING CONDITIONS

- i) BUILDING (OFFICE)
 - LIVE LOADING 400 kg/m²
 - DEAD LOADING (ASSUMED) 450 kg/m²
- ii) STOREY HEIGHT 3.8 M

1H FOR OFFICE BUILDINGS (CLASS 400 LOADING) WITH 3.8 M STOREY HEIGHT

FIG. 1 NOMOGRAMS FOR THICKNESS OF BRICK WALLS