



KARACHI BUILDING REGULATIONS 1961



India
KARACHI DEVELOPMENT AUTHORITY • PAKISTAN

Karachi Building Regulations, 1961.
(K. D. A. Order 1957)

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Karachi Building Regulation 1941

(K. D. A. Order 1951)

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K. D. A.

"Building codes -
Karachi, Karachi"

PREFACE

1. Until recently all building work in Karachi was controlled by the Karachi Municipal Corporation's Building Rules which were drafted in 1933 or even earlier. They were reprinted with some revisions in 1947 and finally re-gazetted without alterations by the Karachi Development Authority in 1959.

2. The Authority became increasingly aware that the old regulations were no longer adequate for the needs of modern Karachi. They were drafted at a time when Karachi was a provincial town with a small population, whereas now it has grown to the status of a metropolitan city with about 2 million inhabitants. Also, a large part of the technical matter of the old regulations had to be revised to bring it in conformity with modern technical and scientific research.

3. The Authority appointed in August, 1959 an Advisory Committee consisting of Pakistani architects and engineers and a U.N. Adviser. The Committee prepared a draft for a new set of regulations and circulated it for comments to more than 20 organisations and authorities in this country and abroad. The draft was amended in the light of the comments received. It will thus be seen that great care was taken in order to ensure that Karachi will possess an up-to-date building code.

4. The new regulations consist of five Parts and four Schedules as follows.

(a) **PART 1.—General Administrative Matters.** Part 1 regulates the method to be followed for obtaining permission to build. On the whole the procedure of the old regulations has been retained, but an attempt has been made to put the regulations into simpler language which is more likely to be understood by all concerned.

(b) **PART 2.—Space Requirements in and about Buildings.** Part 2 concerns itself with buildings in relation to their surroundings. At the same time anything relating to town planning matters has been omitted because such matters will become subject to a separate set of Town Planning Regulations. This part

also regulates minimum floor areas and minimum heights of rooms in accordance with contemporary international standards, as evolved for countries with similar problems and similar climates. Finally, it includes regulations governing the provision of means of escape in case of emergency.

- (c) **PART 3.—Building Structures.** This part deals with the stability and safety of building structures. Extensive reference has been made to British Codes of Practice and Standard Specifications. This is intended to be only a temporary measure until such time as British Standards can be replaced by Standards drafted by the Pakistan Standards Institution. The regulations also require building structures to possess adequate resistance to weather and damp.
- (d) **PART 4.—Drainage and Sanitary Provisions.** This part refers to the Karachi Municipal Corporation's Regulations for drainage, plumbing and sanitary fittings and gives details of sanitary requirements for various types of buildings based on modern international standards.
- (e) **PART 5.—Fire Resistance and Fire Precautions.** This part contains an important addition to the old building rules and consists of twenty new building regulations and a schedule. Its purpose is to ensure that building structures of all types possess adequate resistance to fire.

5. It is considered that the new regulations form a code which is in keeping with the needs of a metropolitan city and which may well be used as a model by other large cities in Pakistan. At the same time it is necessary to anticipate further technical developments and it must be kept in mind that our cities house large numbers of people whose means do not permit them to accommodate themselves in structures which comply in all respects with the standard regulations. In order to allow for such contingencies a measure of flexibility has been introduced so that relaxations can be granted by the Governing Body of the Karachi Development Authority in special circumstances.

H. Farayans

Colonel
CHAIRMAN

KARACHI DEVELOPMENT AUTHORITY

April, 1961.

KARACHI BUILDING REGULATIONS, 1961
(K. D. A. ORDER, 1957)

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KARACHI DEVELOPMENT AUTHORITY

NO:-F.12(2)Reg/KDA/61. In exercise of the powers conferred by Article 15 of the Karachi Development Authority Order, 1957 (President's Order No. 5 of 1957) the Karachi Development Authority are pleased to make the following regulations which shall be known as the Karachi Building Regulations, 1961, and which shall come into force at once, namely:—

PART I—GENERAL ADMINISTRATIVE MATTERS

Section (i) Interpretation of Terms.

“Assembly” (Place of public assembly) means a building used, either ordinarily or occasionally, as a place of worship, theatre, public hall, public concert room, public lecture room, public exhibition room, dharamshala or musafirkhana.

“Authority” means the Karachi Development Authority.

“Aviary” means a structure for keeping or breeding birds.

“Balcony” means an outside projection from a building over-looking a compound, road or court yard and projecting in front of a room and not used as a passage.

“Base” (applied to a wall or pillar) means the underside of the course immediately above the plinth, if any, or in the case of a wall carried by a bressummer immediately above such bressummer or in the case of a building having no plinth, immediately above the footings.

“Basement” means the lowest storey of a building, partly or wholly below ground level.

“Bathroom” means a room containing a water tap or a shower or a bath tub.

“Block of Flats” means a structure occupied by more than one family and having more than one storey.

“Bressummer” means a wooden, metal or R.C.C. beam which carries a wall.

“Building” includes any hut, shed or other enclosure.

“Building Line” means the line up to which the plinth of a building abutting on a street or on an extension of a street or on a future street may lawfully extend.

“Building Works” means erection or re-erection of a building or making additions and alterations to an existing building.

“Canopy” means a roof-like projection from the face of a building.

“Cardinal Points” means a diagram showing North, South, East and West.

“Ceiling” means the underside of a roof or a floor either covered with plaster, ceiling boards or other similar material.

“Cellar” or “Vault” means any storey wholly below the level of the land adjacent thereto.

“Cesspool” means a tank intended to receive waste water and sewage.

"Chairman" means the Chairman of the Karachi Development Authority.

"Chawl" see tenement.

"Corporation" means the Karachi Municipal Corporation.

"Cross Wall" means an internal load bearing wall built at right angles to an external wall.

"Damp-Proof Course" means a layer of material impervious to moisture.

"Dead Load" means the actual weight of walls, floors, roofs, partitions and all other components forming part of a building.

"Detached Building" means a building not joined to another building on any one side.

"Domestic Building" means a building used solely or pro-dominantly as a dwelling house.

"Dormitory" means a sleeping room with several beds.

"Dwelling House" means a building used for human habitation.

"External Wall" means any outer wall or a building abutting on an external or internal open space.

"Factory" means a building used for manufacture, production or repair of any article.

"Fan-Light" means any aperture above the top level of a door or a window so constructed that the whole of it can permit air and light to pass through without obstruction.

"Footings" means the projecting courses at the base of a wall, spreading the weight of the building or structure over the foundation.

"Form Work" or "Centering" means all forms, moulds, sheetings, shutterings, planks, poles, posts, shores, struts, ties, uprights and all other temporary supports to the concrete during the process of setting.

"Foundation" means a structure entirely below the level of the ground, which carries and distributes the load from pillars, beams or walls on to the ground.

"Frame Building" means a building constructed of timber, metal or R.C.C. load bearing frame-work with non-load bearing panel walls.

"Height of a building" shall be taken to be the vertical measurement from the mean level of the ground adjoining the building to the highest part of the roof of that building less one half of the vertical measurement between the levels of the lowest and highest parts of the roof.

"Height of a room" shall be taken to be the vertical measurement from the upper surface of the floor to the underside of the highest part of the ceiling less one half of the vertical measurement between the lowest and highest parts of the ceiling; where there is no ceiling the measurements shall be to the underside of the rafters.

"Impervious Material" means any material which prevents the passage of dampness.

"Karachi Development Authority Area" means the area as specified in the K.D.A. Order 1957, Chapter I, Section 1(2) (President's Order No. 5 of 1957).

"Licensed Architect" means a person licensed by the Chairman under the Karachi Development Authority Licensing of Architects Regulations (Provisional) 1959.

"Loft" means a balcony inside a room with no access to it except from inside such room.

"Masonry" means stone, bricks or cement concrete blocks laid in lime, cement or mud mortar.

"Mezzanine Floor" for the purpose of these building regulations means a loft.

"Open Staircase" in a single storey or two storey (ground and first floor) building means a staircase of which the roof must be fully open to the sky and of which at least two sides must be fully open and clear of any adjoining walls of the building.

"Order" means the Karachi Development Authority Order, 1957 or any amendments for the time being in force.

"Ordinary Repairs" means painting, white-washing, plastering, pointing, paving and minor renewals or alterations.

"Owner" means a person who lawfully owns any premises or any piece of land.

"Panel Wall" means a wall which is built between posts or pillars and wholly supported by beams and which supports no load other than its own weight.

"Partition" means an internal vertical structure which sub-divides a storey of a building into sections and which supports no load other than its own weight.

"Party Wall" means a common wall between two adjacent buildings.

"Parapet" means a dwarf wall whether plain, perforated or panelled along the edge of a roof, balcony, verandah or terrace.

"Pergola" means a structure of which the roof must be at least 75 per cent open to the sky.

"Plinth" means the portion of the building between the level of the street and the level of the ground floor.

"Residential Building" means a building used solely or predominantly as a dwelling house.

"Semi-Detached Buildings" means two buildings constructed on adjacent sites without intervening open space.

"Septic Tank" means a system of chambers made of impervious material, intended for reception and treatment of sewage.

"Soap Pit" means a pit filled with aggregate boulders or brick bats and intended for the reception of waste water.

"Structural Calculations" means detailed calculations prepared by a suitably qualified person showing the sufficiency of the strength of every load bearing part of the proposed structure.

"Superimposed Load" means all loads other than the dead load.

"Tenement" means a building suitable for letting in separate units each consisting of not more than two rooms with a cooking place attached, a common passage and common sanitary arrangements.

"Verandah" means a part of a building facing a street or an internal or external open space with at least half of the external wall space permanently open to light and air.

"Warehouse Class Building" means a building in which merchandise and other goods are stored and includes a factory.

Section (ii) Application of Town Planning Regulations.

- Buildings to conform with Town Planning Regulations.
1. Every person who intends to carry out building works within the boundaries of the Karachi Development Authority Area shall comply with the requirements of the Authority's Town Planning Regulations as and when framed and gazetted. Particular attention is drawn to the Town Planning Regulations dealing with

Density—maximum permissible floor area.
 —maximum number of habitable rooms.
 —maximum number of dwellings.

Space for car parking.

Building lines.

Space at side of buildings.

Maximum height of buildings.

Adequate day light.

Section (iii) Application of Building Regulations.

- Buildings to conform with Building Regulations. Exemptions from Building Regulations.
2. Every person who intends to carry out building works within the boundaries of the Karachi Development Authority Area shall comply with the requirements of these building regulations.
3. Buildings erected by or on behalf of Government shall be exempt from these regulations, provided such buildings serve purposes of defence only.
4. The following buildings shall be exempted from the operation of these regulations:
- (a) Any structure erected or used, or intended to be erected and used exclusively for the purpose of a plant house in connection with a domestic building.
- (b) Any structure intended to stand for a period of not more than six months, provided that previous permission of the Authority has been obtained in writing and an undertaking is given to remove such structures within six months.
5. In order to meet special emergency conditions and the requirements of persons in the sub-economic income group, the Authority may declare special areas where these regulations may be relaxed and where building shall become subject to special low cost housing codes.
6. The Authority may waive the application of building regulations in special cases of research and new forms of construction at their discretion.
7. The K.D.A. Building Regulations (Provisional), 1959 published in Part VII of the Gazette of Pakistan dated 28th August, 1959, are hereby repealed.
- Relaxation of Building Regulations.
- Repeal.

Section (iv) Submission of Applications and Plans.

- Schedule No. 1.
8. All forms of applications and certificates referred to in these regulations are appended at Schedule No. 1. They shall be supplied by the Authority free of charge.
- Employment of Licensed Architects.
9. (i) Every person, who intends to carry out building works or to secure a dangerous building involving additions and alterations, shall employ a Licensed Architect to supervise the building works or the securing of such dangerous building involving additions and alterations.

- 9
- (ii) The Licensed Architect so employed shall give notice to the Authority in writing on the prescribed form A-2 of his having undertaken to supervise such work. Where the Architect so employed ceases to be in charge of such building works before the same is completed, further execution of such work shall forthwith be suspended until afresh appointment is made as required under sub-regulation (i). A certificate on the prescribed form B-2 duly signed by the Licensed Architect employed under this regulation shall be obtained by the owner, in token of the work or part of the work having been satisfactorily done under his supervision.

New structures.

10. Every person who intends to erect or re-erect a building shall submit to the Authority an application in writing on the prescribed form A-1 for permission to execute the work and the name of the Licensed Architect whom the owner employs to supervise its erection. The Architect so employed shall submit to the Authority the following along with a notice on the prescribed form A-2:

- (a) A block plan of the site drawn to a scale of not less than 40 feet to one inch showing the position of the proposed building and existing buildings, if any; the width and level if necessary of the streets, if any, on which the plot abuts and the survey number or numbers of the adjoining plot or plots, if any, together with the cardinal points.
- (b) Plans, sections and elevations of every floor including basement, cellar and vault, if any, of the building intended to be erected, which shall be drawn to a scale of not less than one inch to eight feet or if the building is so extensive as to make a smaller scale necessary, not less than one inch to sixteen feet. Such plans and sections shall show the purpose for which the building or parts thereof are intended to be used; the access to and from the several parts of the building and its appurtenances; the position, form, dimensions, means of ventilation, the depth and nature of the foundations, the proposed height of the plinth and superstructure at the level of each floor together with the dimensions and descriptions of all the walls, floors, roofs, posts, columns, beams, joists, girders and scantlings to be used in the walls, staircases, floors and roofs of such building.
- (c) A plan showing the intended line of drainage of such building and the size, depth and slope of each drain and the details of the arrangement proposed for the ventilation of the drains. A description of each item of work proposed to be executed and of materials to be employed. Such description shall include details of the proposed method of the drainage of the building intended to be erected, of the sanitary fittings to be used and also of the means of water supply.
- (d) Detailed calculations showing the sufficiency of the strength of every load bearing part of such building, if required.
- (e) Any other information or document required by the Authority to deal satisfactorily with the plan.

Existing structures.

11. Every person who intends—

- (a) to make any addition or alteration to a building involving the removal or re-erection of any roof or any outer wall, or of any wall which supports the roof thereof or change the size of any existing room or passage thus affecting the light and ventilation of the building;
- (b) to remove or renew posts, columns and beams of a building;

(c) to make any structural alterations;

(d) to make any alterations in a building involving:

—the sub-division of any room or a shop or any other part of the building so as to convert the same into two or more separate rooms or shops or parts of the building;

—the conversion of any passage or space or a garage in such building into a room or a shop or any other use;

(e) to reconstruct any building or any portion thereof;

shall submit an application to the Authority in writing on the prescribed form A-1 for permission to execute the work and in cases where the employment of a Licensed Architect is necessary the name of the Licensed Architect, whom he has employed to supervise its execution. The Licensed Architect shall submit to the Authority an application on Form A-2 along with all the information and documents, as required under regulation 10.

Documents
of title.

12. Every person who intends to carry out building works under regulations 10 and 11 shall, if required, produce all documents of title relating to the plot showing his right to carry out such works.

Plans and
documents.

13. (i) Every person, who under regulation 10 and regulation 11, is required to furnish to the Authority any plan or other documents, shall furnish three copies of every such plan. One of such triplicate plans shall be mounted or drawn on linen, and shall be retained by the Authority together with one more copy. The third copy shall be signed by the Chairman or any other officer authorised by him on his behalf when signifying his approval and shall be returned to the person by whom the same were furnished. In the case of unregistered documents, a copy of every such document shall be furnished, if so required by the Authority. In the case of registered documents, the applicant shall merely produce the documents for inspection.
- (ii) Every plan of any building submitted under regulation 10 and regulation 11 shall, in token of its having been prepared by a Licensed Architect or under his supervision, bear his signature.

Period of
approval.

14. (i) Within thirty working days after the receipt of an application for permission to carry out building works the Authority shall—
- (a) pass orders granting or refusing permission to carry out such building works, and in the case of refusal specifying the provisions of the regulations violated; or
- (b) require further details in the plans, documents, specifications and any other particulars to be submitted to it.

- (ii) If the Authority shall not have passed orders granting or refusing permission specifying the provisions of the regulations violated within 30 working days following the day on which all the information necessary has been furnished and all documents, plans, specifications and particulars called for have been submitted; or if such additional particulars have not been called for within said 30 days from the receipt of an application; such permission shall be deemed to have been given, and the applicant may at any time within one year from the date of delivery of the notice on form A-1 proceed to carry out the said building works in accordance with his intention as described in the application or in any

of the documents aforesaid, but not so as to contravene any regulations at the time in force.

Evidence of permission.

15. Whenever under any of the regulations the doing or the omitting to do a thing or the validity of anything depends upon the sanction, permission, approval, order, direction, requisition, notice or satisfaction of the Authority, a written document signed by the Chairman or any officer duly authorised by him purporting to convey or set forth his sanction, permission, approval, order, direction, requisition, notice or satisfaction shall be sufficient *prima facie* evidence.

Cancellation of permission.

16. If at any time after permission to carry out building works has been given, the Authority is satisfied that such permission was granted in consequence of any material misrepresentation or fraudulent statement contained in the application made under regulation 10 or 11 in the plans, elevations, sections or specifications and documents submitted therewith in respect of such building, such permission may be cancelled and any work done thereunder shall be deemed to have been done without permission.

Provided that the applicant shall have a right to have the orders reviewed within one month by the Authority, whose decision shall be final.

Work carried out without permission.

17. (i) If the building works are commenced or carried out contrary to the provisions of the Order or regulations made thereunder, the Authority shall—

(a) by written notice require the person who is carrying out such building works forthwith to cause to be stayed all work thereupon;

(b) by written notice require the person who is carrying out or has carried out such building works on or before such day as shall be specified in such notice, by a statement in writing subscribed by him or by an agent duly authorised by him and addressed to the Authority to show sufficient cause why such building works or such part thereof shall not be removed or altered to comply with the regulations;

(c) require the said person on such day at such time and place as shall be specified in such notice to attend personally or an agent duly authorised by him and show sufficient cause why such building works or part thereof shall not be removed or altered.

- (ii) If such person shall fail to show sufficient cause to the satisfaction of the Authority why such building works or part thereof shall not be removed or altered, the Authority may remove or alter the building works or part thereof and the expenses shall be paid by such person.

Section (v) Fees and Penalties.

Scrutiny fees.

Schedule No. 5.

18. (i) The Authority shall charge for the scrutiny of building plans required to be submitted under these regulations a fee to be known as scrutiny fee at the rates listed in Schedule No. 5.

(ii) The Authority may exempt from charge of scrutiny fee building plans for premises which in the opinion of the Authority will be used for religious, charitable, or educational purposes.

(iii) If the building plans previously approved are amended, the Authority may charge a fee for scrutiny of the amended building plans.

- (iv) If plans of an actual building submitted after completion of such building show substantial deviations from the plans previously approved, the Authority may charge the fee for scrutiny of such plans.
- (v) No scrutiny fee shall be charged for renewal of approval of any building plans.
- (vi) No scrutiny fee shall be charged for granting permission to occupy a building, if the building has been completed, entirely in accordance with building plans approved or if the building has been completed with such deviations from the said building plans as are in the opinion of the Authority insignificant or minor.
- Penalties.
(Article 147 of
KDA Order,
1957).
19. Whoever contravenes any provision of these regulations or fails to comply with any direction lawfully given to him under any of these regulations shall be punished for each such offence as provided in Article 147 of the K.D.A. Order, 1957.

Section (vi) Procedure, Notices, Inspections and Certificates during Construction

- Site
Operations
Code.
Safety and
Stability of
Buildings.
20. Every person who carries out building works or demolition works shall comply with the Authority's Site Operations Code as and when framed and gazetted.
21. Every person who carries out building works shall use sound building materials which shall be of good quality and properly put together so as to ensure safety and stability of the building.
- Verification
of building
lines.
22. Every person who commences to carry out building works, as is described in regulations 10 and 11 shall give notice to the Authority in writing on form D and shall not proceed further with the work for a period of one week to enable the Authority to verify the building lines. The Authority shall intimate within the aforesaid period to the owner or his representative any error which may be found in the building line. Failing such intimation from the Authority the owner will be entitled to proceed with the building work.
- Inspection
of buildings.
23. The Authority may—
- (a) at any time, before the approval of an application received under regulations 10 and 11,
- (b) at any time during the carrying out of the building works,
- (c) within 30 days from the receipt of the notice of completion or the certificate of completion with respect to any such building,
- (d) if no notice of completion or certificate has been received, at any time after the building has been erected, added to or altered;
- inspect such building without giving previous notice.
- Work not in
accordance
with approved
plans.
24. (i) If on making any inspection under regulation 23 above, the Authority finds that the building works—
- (a) are otherwise than in accordance with the plans that have been approved; or
- (b) contravene any of the provisions of the Order or any regulation made thereunder;

the Authority may, by written notice, require the person carrying out building

works within a period to be specified in such notice, either to make such alterations as shall be specified in such notice with the object of bringing the work into conformity with the said plans or provisions of the regulations or to get amended plans approved after complying with the requirements of the Order and the regulations made thereunder.

(ii) In the event of non-compliance with the requisition as made under sub-regulation (i) above, it shall be competent for the Authority to order cessation of work or order demolition of so much of the construction as contravenes any of the provisions of the Order or any regulation made thereunder, and the expenses thereof shall be paid by the owner.

Exposure of works for inspection.

25. (i) If there be reasonable ground for suspecting that in the carrying out of building works anything has been done contrary to any provision of the Order or any regulation made thereunder, or that anything required by any such provision or regulation to be done has been omitted to be done; and if, on inspecting such building, it is found that the same has been completed or is too far advanced to permit of any such fact being ascertained; the Chairman may, with the approval of the Authority, by written notice, require the person who has carried out the building works to cause so much of such building as prevents any such fact from being ascertained to be drilled, cut into, laid open, exposed or pulled down to a sufficient extent to permit of the same being ascertained.

(ii) If it shall thereupon be found that in the carrying out of such building works nothing has been done contrary to any provision of the Order or any regulation made thereunder, and that nothing required by any such provision or regulation to be done has been omitted to be done, compensation shall be paid by the Authority to the person aforesaid for the damage and loss incurred by drilling, cutting into, laying open, exposing or pulling down the building.

Notice of completion. (Article 68 of K.D.A. Order, 1957).

26. (i) Every person who carries out and completes building works approved under these regulations shall within one month of the completion of the work deliver to the Authority at its office notice in writing on the prescribed Form B-1 or C-1, as the case may be, of such completion together with a certificate or certificates on the prescribed Form B-2 or C-2, as the case may be, duly signed by the Licensed Architect employed under regulation 9.

Permission to occupy.

(ii) After the receipt of the said notice the Authority shall depute an officer to inspect such work and after such inspection, either approve or disapprove the building for occupancy or make such further order as it may decide.

(iii) No person shall occupy or permit to be occupied any such land, building or use or permit to be used any part affected by the re-erection, of such building until the permission referred to in clause (ii) has been granted in the prescribed manner.

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Every building to have separate approach.

32. Every building not abutting on a street shall have an access or a right of way for an approach from the street open to the sky and at least 8 feet wide if the length of such access or right of way does not exceed 50 ft. from the street. If the length exceeds 50 ft. the width shall be at least 16 feet in order to facilitate access by the Fire Brigade to the rear building. In cases where conditions do not permit the application of this rule, a waiver may be considered at the discretion of the Authority.

Buildings at street junctions.

33. Where a building is erected at the junction of two streets and in cases where the degree of splay or rounding off is not shown in an approved Town Planning Scheme of the Authority or a layout plan sanctioned by the Authority, the corner shall be splayed or rounded off in a manner as provided in the Town Planning Regulations.

Projections over a public street and over the building line.

34. (i) Projections of steps, string courses, cornices, eaves, chhajjas and similar projections over a public street are permissible free of any fee subject to:

(a) String courses or steps shall not project more than 2 inches beyond the street line on any public street.

(b) The projection of cornices shall be as follows:

<i>Width of street</i>	<i>Maximum Projection</i>
20 ft. and less	1 foot.
more than 20 ft. up to 40 ft.	1 foot 3 inches.
more than 40 ft.	1 foot 6 inches.

(c) The projection of top cornices, chhajjas, eaves and the like shall be as follows:

<i>Width of street</i>	<i>Maximum projection</i>
20 ft. and less	1 foot.
more than 20 ft. up to 40 ft.	2 feet.
more than 40 ft.	3 feet.

(ii) Any projection over a public street beyond what is prescribed in sub-regulation (i) may be permitted by the Authority at its discretion on such conditions as may be prescribed by the Authority and on payment of a fee.

(iii) The Authority may in its discretion give written permission on payment of the prescribed fees to an owner of a building abutting on a public street to construct open balconies and sun shades projecting from such buildings over such streets, subject to the following conditions and restrictions:

That the maximum length, height and projection of balconies and sun shades with reference to the width of the street over which these are permitted to project shall be as under:

Width of street	Maximum length of		Maximum projection	Minimum height above centre of street	
	balconies	sunshades		balconies	sunshades
30 ft. and less than 35 ft.	20 ft.	—	2 ft.	16 ft.	12 ft.
35 ft. and less than 40 ft.	20 ft.	—	2 ft. 6 ins.	16 ft.	12 ft.
40 ft. and less than 50 ft.	20 ft.	—	3 ft.	16 ft.	12 ft.
50 ft. and more	20 ft.	—	4 ft.	16 ft.	12 ft.

The minimum permissible height of balcony projections above the centre of street may be decreased by the Authority at its discretion in sub urban areas.

In case of corner plots the maximum projection of a balcony at the corner shall be in accordance with the width of the wider of the two streets as specified in the table above; provided that if half the length or more of the said balcony projects on the narrower of the two streets, the maximum projection of the balcony shall be regulated in accordance with the width of the narrower of the two streets.

- (iv) All projections of steps, string courses, sun shades, cornices, eaves, chhajjas and balconies over a public street may be in continuation of projections within the owner's plot.

Covered
Arcades.

35. The Authority's town planning schemes may require the formation of covered arcades (verandah ways) within the curtilage of building plots.

The minimum width of such arcades shall be 7 ft. 6 inches measured at pavement level between the street line and the front of the building. Piers or columns along the street line shall not exceed 2 feet in depth leaving a minimum clear space of 5 ft. 6 inches between the piers or columns and the front of the building. The "front" of the building shall be that part of the building nearest to the street.

Pergolas.

36. Pergolas shall not be permitted within the minimum open spaces required by these building regulations.

Section (ii) Internal Lighting and Ventilation.

Size of
external
openings.

37. Every room other than rooms used predominantly for the storage of goods shall be provided with natural lighting and natural ventilation by means of one or more openings in external walls having a combined area of not less than 10 per cent of the floor space of such room and the whole of such openings shall be capable of allowing free uninterrupted passage of air.

Cross
ventilation.

38. In addition to the requirements of the preceding building regulation there shall also be provided in the case of domestic buildings constructed in continuous rows (terrace development) permanent ventilation by the provision of ventilators in all internal walls which are parallel to the external walls at each storey. Such vents shall have a net opening of not less than 6 sq. feet per room.

Internal
air wells.

39. (i) Kitchens, lavatories, W.Cs. and bath rooms may receive day light and natural ventilation from internal air wells. In such cases air wells shall conform with the following minimum sizes:

for buildings upto two storeys in height	..	50 sq ft.
minimum width of well .. .. .	..	5 ft.
for buildings higher than two storeys	..	100 sq. ft.
minimum width of well .. .. .	..	8 ft.

- (ii) The floor of each air well shall have impervious paving and shall be adequately drained.

- (iii) Reasonable access shall be provided at the bottom of each air well.

(iv) No internal air well or portion thereof shall be roofed over.

- Latrines. 40. Every latrine shall have openings for permanent ventilation into the external air of not less than 2 sq. ft. aggregate area.
- Water Closet and Bathrooms. 41. Every Water Closet, urinal stall and bathroom shall be provided with natural lighting and ventilation by means of one or more openings in external walls having a combined area of not less than 2 sq. ft. per water closet, urinal stall or bathroom and such openings shall be capable of allowing free uninterrupted passage of air.
- Garages. 42. Every garage shall be provided with adequate ventilation and lighting as required by the Authority.
- Staircases. 43. All staircases shall be provided with adequate lighting and ventilation to the satisfaction of the Authority.

Section (iii) Mechanical Ventilation.

- Air conditioning. 44. (i) Where permanent air-conditioning is intended the relevant building regulations dealing with natural ventilation, natural lighting and heights of rooms may be waived at the discretion of the Authority.
 (ii) Consideration to the waiver of the relevant regulation will only be given if in addition to the permanent air conditioning system there are provided alternative approved means of ventilating the air-conditioned rooms.
 (iii) A minimum number of air changes per hour for any one type of accommodation shall be provided to the satisfaction of the Authority.
- Mechanical Ventilation. 45. In lavatories, W.Cs., and bathrooms, where permanent mechanical ventilation is provided to the satisfaction of the Authority the relevant building regulations dealing with natural ventilation and natural lighting will not apply.

Section (iv) Space Requirements inside Buildings.

- Minimum floor areas: Residential Buildings. 46. (i) The minimum total habitable floor area for residential buildings (other than servants quarters) excluding corridors, lobbies, staircases, kitchens, bathrooms, W.Cs. and latrines shall be as follows:

One room dwellings:	..	..	..	140 sq. ft.
Two room dwellings:	..	..	..	200 sq. ft.

and an additional 100 sq. ft. for each additional room. No habitable room shall have a floor area of less than 100 sq. ft.

- (ii) The minimum width of a habitable room shall be 7 feet.
- (iii) The minimum floor area of a servant room shall be 120 sq. ft.
- (iv) The minimum floor area of kitchens shall be 50 sq. ft. The minimum width of kitchens shall be 5 ft.

- Minimum floor areas: Shops. 47. The minimum floor area of a shop shall be 100 sq. ft. and the minimum width of a shop shall be 8 feet.

Latrines,
W.Cs. and
Bathrooms.

48. In all types of buildings the minimum areas and widths of latrines, W.Cs. and bathrooms shall be:

	<i>Min. area</i>	<i>Min. width</i>
Latrine or W.C.	12 sq. ft.	3'-0"
Bathroom	15 sq. ft.	3'-0"
Combined W.C. and Bathroom	24 sq. ft.	3'-0"

Minimum
height of
rooms.

49. (i) Residential Buildings:

The minimum clear height of rooms shall be—

Habitable rooms	8 ft. 6 inches
Kitchens	8 ft. 6 inches
Bathrooms, W.Cs., Latrines,	7 ft. 6 inches
Garages and Porches	7 ft. 6 inches

- (ii) Schools:

The minimum height of rooms used for teaching shall be 12 feet.

- (iii) Hospitals, Maternity and Nursing Homes:

The minimum height of rooms used to accommodate patients shall be 10 feet.

- (iv) Factories and Workshops:

The minimum height of all working areas shall be 10 feet.

- (v) Places of Assembly:

The minimum height of rooms shall be 12 feet.

- (vi) Any other type of building, including shops:

The minimum height of room shall be 10 feet.

- (vii) Basements, Cellars, Vaults:

The minimum height of any basement, cellar or vault shall be 7 feet 6 inches.

The Authority will grant permission for the construction of basements, cellars and vaults at its discretion.

- (viii) Open ground floors:

Where the greater part of a ground floor is left open for use as a car park or a covered play space the minimum height shall be 8 ft.

- (ix) Mezzanines and Lofts:

The minimum height of rooms in Mezzanines and Lofts shall conform with the height applicable to the buildings in which they are being provided, with the exception of shops where the height may be reduced to seven feet, provided that—

- (a) no mezzanine or loft shall be permitted in shops having a height of less than 16 feet from floor to ceiling;
- (b) the total mezzanine or loft area in any shop shall not exceed one-third of the total floor area of the shop;

- (c) the underside of every mezzanine or loft shall not be less than 8 feet above the floor of the shop;
- (d) in no case shall a mezzanine or loft be permitted within 6 feet from the front wall of the shop;
- (e) every such mezzanine or loft shall be open except for a railing not exceeding 4 feet in height.
- (f) Every such mezzanine or loft shall be accessible by a ladder or a staircase of non-inflammable material and located inside the shop.

(x) **Minimum headroom:**

The minimum headroom under beams and lintels shall be 6 feet and 3 inches.

Section (v) Means of escape in case of emergency.

Means of escape in case of emergency.

50. (i) All means of escape from a building including exit ways, corridors, stairs etc. should permit unobstructed access to a street or to an open space or to an adjoining building or roof from where access to the street may be obtained.

The Authority deals with each case on its merits after full consideration of the circumstances. Nothing contained in Building Regulation No. 51 must be taken as in any way derogating from the powers of the Authority to secure reasonable and adequate means of escape in case of emergency.

Assessment of occupation.

- (ii) As a guide to assessing the requirements for means of escape, the population of various portions of buildings, the number of persons and the population density (where not specifically stated or shown on layout or seating plans) the following is the basis of calculation:

One person per—

- 5 square feet for a closely seated audience.
- 5 square feet of circulating gangways leading up to or provided between the sale stalls or counters in bazars or retail trade premises frequented by persons in large numbers.
- 6 square feet in dance halls.
- 12 square feet in restaurants.
- 40 square feet in workrooms and factories.
- 50 square feet in shops and show rooms.
- 100 square feet in offices.
- 300 square feet in warehouses.

- (iii) All buildings shall have windows on the street elevation within convenient reach and of adequate shape and size to enable persons to escape in case of emergency.

Clear widths of exit ways.

51. (i) The clear widths referred to in this Building Regulation shall mean the unobstructed and clear width of the staircases between finished wall surfaces or face of stringer beams in the case of stair wells. This width shall apply (except where specifically laid down) to all corridors and passages leading to the staircases and from the staircases to the exits and shall also apply to the exits. There shall be no projection inside the "clear width" of any corridor, passage, stairway or ramp (other than handrails) at a level lower than 6'9" above the floor or above any stair.

Every exit way shall open directly on to an open space or a porch leading to a street and shall be easily accessible therefrom. Doors in exit ways shall open in the direction of escape.

Clear widths
of staircases.

- (ii) In buildings where the floors above the ground floor are occupied by more than 250 persons two staircases shall be provided as follows:

Population	First Staircase	Second Staircase
Upto 350 persons	4'-0" wide	3'-0" wide
" 450 "	4'-6" "	3'-0" "
" 550 "	5'-0" "	3'-6" "
" 650 "	5'-6" "	3'-6" "
" 750 "	6'-0" "	4'-0" "

Staircases and exits for buildings accommodating more than 750 persons shall be calculated in proportion.

Combined
width
acceptable.

- (iii) The width of first and second staircases may be varied as long as the combined width of all staircases is as specified.

Staircases,
passages,
corridors.

- (iv) Residential premises (other than blocks of flats).

The minimum width of staircases shall be 2'-0" clear for buildings not exceeding two storeys in height. For every additional storey the width of staircases shall be increased by 3" throughout their entire height. The minimum width of corridors and passages shall be 2'-9" clear in all cases.

Blocks of flats (heights not exceeding 42'-6" to highest floor level).

At least one staircase shall be provided having the following minimum widths throughout its entire height:

Upto four storeys in height	..	..	..	3'-6" clear.
In excess of four storeys in height	..	..	..	4'-0" clear.

Where only one staircase is provided the maximum number of flats on each storey shall be limited to eight.

Where only one staircase is provided in blocks of flats over four storeys in height reasonable access shall be provided to the satisfaction of the Authority for a fire engine to reach a point below each flat.

Access corridors leading from staircases to flats shall have a minimum width of 4 feet clear. The minimum distance from the entrance door of a flat to the head of a staircase shall not exceed 70 feet.

Blocks of flats (height exceeding 42'-6" to highest floor level).

All flats shall have access to a secondary staircase which shall be continuous to street level. A secondary staircase shall not serve more than eight flats per storey and it shall be located to the satisfaction of the Authority. Secondary staircases and passages leading thereto shall have a minimum width of 2'-9".

Blocks of flats (all types).

The minimum width of passages and corridors inside flats shall be 2'-9" clear.

- (v) Commercial and business premises.

For buildings not more than two storeys high and accommodating on the first

floor not more than 50 persons one staircase of a width not less than 3'-6" wide shall be provided. In all other cases an additional means of escape must be provided of a minimum width of 2'-6".

The distance from any point to the nearest staircase shall not exceed 100 feet.

(vi) **Departmental stores, shops and factories.**

At least two staircases shall be provided; one of a minimum width of 3'-0" and the other of a minimum width of 2'-6".

The distance from any one point to the nearest staircase shall not exceed 100 feet.

Passages between rows of shops or stalls shall conform with the following minimum widths:

Length of passage	Shops or Stalls	
	On one side only	On both sides
Upto 50 feet	5 feet	7 feet
" 150 "	6 "	8 "
More than 150 feet	7 "	9 "

(vii) **Warehouses.**

For buildings not more than two storeys high and accommodating not more than 50 persons at first floor level, one staircase of a minimum width of not less than 3'-6" shall be provided.

The normal requirements for staircases and exit ways shall be increased at the discretion of the Authority if the goods stored present a special fire hazard.

The distance from any one point to the nearest staircase shall not exceed 100 ft.

(viii) **Hospitals.**

The entrance to any ward or room used for accommodating patients shall be within 70 feet from the nearest staircase. From each such ward or room there shall be access to a secondary staircase. The width of all staircases shall be not less than 4'-6" and the width of corridors and passages leading to such staircases shall not be less than 6 feet wide.

(ix) **Schools and Places of public assembly.**

Exit ways, viz. exit doors, staircases, corridors, passages and exits to a street or large open space shall be provided for every floor or tier as follows:

Occupation	Two exit ways
Upto 200 persons	3'-6" each
" 300 "	4'-0" "
" 400 "	4'-6" "
" 500 "	5'-0" "

An additional exit way of 5 feet shall be provided for each additional 250 persons or part thereof. Additional exits from stages, where there is a fire curtain, shall be provided to the satisfaction of the Authority.

(x) Places of public assembly: Additional requirements.

- (a) A clear passage or gangway not less than 4 feet wide shall be provided around the stalls and balcony provided that—
- if the passage or gangway on the balcony leads to exit, of equal width the rear passage may be omitted; and
 - no passage is necessary at the front of the balcony.
- (b) Where considered necessary by the Authority gangways not less than 4 feet wide running parallel to the seating shall be provided.
- (c) Gangways not less than 4 feet wide shall be provided intersecting the rows of seating in such a manner that no seat shall be at a greater distance than 7 seats from a gangway measured in the line of seating.
- (d) Steps shall not be used to overcome differences in level in a gangway unless the slope of such gangways exceed 1 in 10.
- (e) Where steps of a pitch exceeding 30 degrees or ramps of a slope exceeding 1 in 10 are provided in gangways flanking the seating suitable handrails shall be provided.
- (f) The treads of steps in gangways shall have a nonslip surface and the edges of such steps shall be illuminated at step level.
- (g) Guard rails not less than 3 feet 3 inches above floor level shall be provided at the foot of gangways in circles and galleries or areas where the incline exceeds 15 degrees.
- (h) The slope of the tiers shall not exceed 30 degrees.
- (i) Lobbies, corridors or passage ways intended for the use of the audience outside the auditorium shall be at least 6 feet wide.
- (j) All exit doors and doors through which the public pass on the way to open air shall be without locks, bolts or other fastenings while the public are in the building; except that doors used for exit only may be fitted with panic bolts.
- (k) Panic bolts shall be not more than 3 feet nor less than 2 feet 6 inches from the ground.
- (l) Only panic bolts which are operable by horizontal thrust shall be employed.
- (m) Turnstiles, if installed, shall be arranged clear of the line of exit, and shall not be included in the calculation of exit width.
- (n) Every external doorway used by the public which is necessarily locked when the public are not in the building and every collapsible gate shall, during the whole time that the public is present, be made capable of being locked in the fully open position in such a way that a key is required to release it.
- (o) No ticket window shall open on to any public street and cause obstruction thereon.

(xi) Staircases: General structural requirements.

The design of staircases and the provision of handrails shall comply with building regulation Nos. 77-81.

PART 3 — BUILDING STRUCTURES

Section (i) Sites.

Insanitary sites to be covered.

52. No building shall be erected upon a site reclaimed by Town sweepings or other refuse, until the whole ground surface or site of such building has been rendered or become innocuous and has been covered with a layer of clean earth, sand, hard core, clinker or ash, rammed solid at least 12 inches thick.

Ground Floor level.

53. (i) In the absence of an effective storm water drainage system the ground floor of every house abutting on a street shall be raised above the level of the verandah way or foot-way and shall not be less than two feet above the level of the road at the centre.
- (ii) In the case of shops the ground floor abutting on a street shall not be less than one foot above the level of the road at the centre.

Boundary Walls.

54. (i) Boundary walls may be erected on the boundaries of plots to any height (consistent with stability) approved by the Authority at their discretion.
- (ii) Boundary walls which abut on a public street, pathway or place which the public are allowed to use, shall not consist of fencing in which is used barbed wire or any material likely to cause injury to persons or animals.
- (iii) The owner of every building with a compound and every open plot shall, if so required by the Authority, provide a boundary wall or fencing and every such wall or fencing shall be maintained in good condition and repair.

Section (ii) Foundations.

Ground to be tested.

55. The owner shall cause tests to be made to prove the nature of the ground as required by the Authority.

Foundations near drains.

56. Where a building is to be erected near a drain or an excavation at a distance less than the depth of the said drain or excavation the owner shall satisfy the Authority that the foundations of the buildings are carried down to a level safeguarding its stability.

Safe bearing capacity of soils.

57. *Table of safe loads on different soils for guidance.*

Group	Type of sub-soil	Condition of sub-soil	Tons per Sq. foot
I.	Rock	Not inferior to sand stone, lime stone or firm chalk.	5 and more
II.	Murram Kunkur	compact	1.5—2
III.	Gravels and Red Earth	compact	1
IV.	Clay Sandy Clay	stiff	1

Group	Type of sub-soil	Condition of sub-soil	Tons per Sq. feet
V.	Clay Sandy Clay Alluvial Earth	firm	$\frac{3}{4}$
VI.	Sand Silty Sand Clayee Sand	loose	$\frac{1}{2}$
VII.	Silt Clay Sandy Clay Black Cotton Soil	soft	$\frac{1}{2}$
VIII.	Silt Clay Sandy Clay Silty Clay.	very soft	$\frac{1}{4}$

Foundations of walls and piers.

58. (i) Unless supported on a beam every load bearing wall or pier or the footings thereof, if any, shall rest on concrete and such concrete shall extend horizontally beyond each of the side and end faces of the wall or pier to a distance of not less than six inches.
- (ii) The thickness of concrete foundations shall be taken at an angle of dispersion of not less than 45 degrees.
- (iii) If constructed in reinforced concrete the foundations shall comply with the requirements of the building regulations for reinforced concrete.

Section (iii) Load Bearing Requirements.

Load bearing structures generally.

59. (i) The load bearing structure of a building above the foundations shall be capable of safely sustaining and transmitting the dead load and imposed loads and the horizontal and inclined forces to which it may be subjected without exceeding the appropriate limits of stress for the materials of which it is constructed and without undue deflection.

Schedule No. 2.

- (ii) The dead load and imposed loads, including wind loads, shall be calculated in accordance with the provisions of Schedule No. 2.

Schedule No. 4.

- (iii) Until such time when the relevant Pakistani Codes of Practice and Standard Specifications have been drafted, structural calculations shall be based on British Codes of Practice and Standard Specifications. (See Schedule No. 4).

Type of Masonry.	Limit of total permissible load in tons due to superincumbent weight and all other loads per sq. ft. of horizontal sectional area.
Ashlar or Masonry (1st class) with Lalbucker, Hub, Gizri, Jungshahi or local stones in lime mortar	15
Ashlar or Masonry in cement mortar (1:4 i.e. one part of cement to four parts of sand)	18
Ashlar or Masonry (2nd class) with Lalbucker, Hub, Gizri, Jungshahi or local stones in lime mortar	12
—do— —do— in cement mortar (1:4)	15
Burnt bricks (Karachi) in lime mortar	3
—do— —do— in cement mortar (1:6)	5
Burnt bricks (table moulded) in lime mortar	5
—do— —do— in cement mortar	7

Structural
Steel Work.

60. Structural steel work shall be deemed to comply with building regulation No. 59. (load bearing structures generally), if—

- (a) the design and construction of the steel work are based upon the relevant recommendations of British Standard Code of Practice CP 113 "The structural use of steel in buildings"; or—
- (b) the steel work is designed and constructed in accordance with the relevant rules given in British Standard 449 "The use of structural steel in buildings".

Structural
work of
reinforced
concrete.

61. Structural work of reinforced concrete shall be deemed to comply with building regulation No. 59 (load-bearing structures generally) if the design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 114 "The structural use of normal reinforced concrete in buildings".

Structural
work of
timber.

62. Structural work of timber shall be deemed to comply with building regulation No. 59, (load-bearing structures generally) if its design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 112 "Structural use of timber in buildings".

Walls, piers
and columns:
masonry.

63. A wall, pier or column shall be deemed to comply with building regulation No. 59 (load-bearing structures generally) if its design and construction are based upon the relevant recommendations of British Standard Code of Practice CP 111 "Structural recommendations for load-bearing walls".

Structural
calculations.

64. The owner shall submit structural calculations to prove the stability of foundations and super-structure if required by the Authority.

Section (iv) Resistance to Weather and Damp.

- Roofs and external walls.** 65. Every roof and external wall, including any parapet, of any building in which people live or work shall be constructed to adequately resist the penetration of rain.
- Damp-proof courses.** 66. (i) Every wall of a building shall be provided with a damp-proof course at a height of not less than six inches above the surface of the ground adjoining the wall and not higher than the level of the upper surface of the concrete or other similar solid material forming the structure of the floor.
- (ii) Where any part of a floor of the lowest or only storey of a building is below the surface of the adjoining ground and the wall or part of a wall of the storey is in contact with the ground—
- (a) the wall or part of a wall shall be constructed or be provided with a vertical damp-proof course so as to be impervious to moisture from its base to a height of not less than six inches above the surface of the ground; and—
- (b) an additional damp-proof course shall be inserted in the wall or part of a wall at its base.
- (iii) Where the floor of a building is in the opinion of the Authority subject to water pressure that portion of the building below ground level shall be suitably water-proofed to the satisfaction of the Authority.

Section (v) Walls.

- Containing Walls.** 67. Every building shall be contained within its own walls or party walls which together with all cross walls shall be constructed of brick, stone, concrete (properly bonded and solidly built together with lime cement mortar or with cement mortar) or other hard and non-inflammable materials.
- Under-pinning.** 68. If under-pinning is required the owner or his agent shall give written notice to the Authority stating the method of under-pinning proposed to be used and shall obtain the written sanction of the Authority before proceeding with the work.
- Wall thickness for residential buildings.** 69. In the case of residential buildings with storey heights not exceeding 12 feet, the following wall thicknesses are deemed to be adequate, provided that the walls are constructed in concrete blocks of a mix (by volume) of one part of cement; 3 parts of sand; 6 parts of aggregate and of a minimum crushing strength of 400 lbs./sq. inch.

(a) External and Party Walls:

	Thickness
Single Storey Buildings	9"
Buildings up to 30 ft. in height: (length of wall not exceeding 30 feet)	
Ground floor	12"
Upper floors	9"
Buildings up to 45 ft. in height: (length of wall not exceeding 30 feet)	
Ground floor	15"
Intermediate floors	12"
Top floors	9"

(b) Cross Walls:

The thickness of every internal cross wall shall be at least two-thirds of the thickness prescribed for an external or party wall of the same height and length, provided that if such cross wall supports a load, the whole of such cross wall shall be of the thickness prescribed for an external or party wall and all cross walls shall be bonded to the main walls to which they abut.

(c) Mortar:

The mortar shall be of a mix of one part cement and five parts of sand.

(d) Floor spans.

The wall thicknesses specified shall be assumed to be sufficient to carry R.C. floors up to 14 feet span. Where walls carry floors of a span exceeding 14 feet the thickness shall be calculated in accordance with British Standard Code of Practice CP 111. Adequately designed bed plates shall be provided for beams in all cases.

External panel walls in framed buildings.

70. If a building is fully framed and no part of the panel wall sustains or transmits any load other than that due to its own weight and to wind pressure on its own surface, such panel wall may be of—

(a) $4\frac{1}{2}$ inches brickwork reinforced with suitable expanded metal in every eighth course, the panel not being greater than 16 feet in length and 11 feet in height and suitably fixed to the framework. For a greater length or height the panel wall shall be 9 inches thick.

(b) 6 inches thick precast concrete blocks, the panel size being as for $4\frac{1}{2}$ inch brickwork. For a greater length or height the panel wall shall be 8 inches thick.

Special panel construction or cladding. (External walls).

71. Any other form of panel filling or cladding to framed buildings not specified in these Building Regulations shall be subject to special sanction by the Authority.

Section (vi) Floors

Structural strength. (Schedule No. 2)

72. Every floor shall be capable of sustaining adequately its own weight and any imposed loads which it is likely to be subjected to.

Notice as to permissible loads on floors.

73. (i) In every storey, except where the floor is one used for residential purposes, there shall be exhibited by the owner at each staircase or at some other appropriate place permanently and conspicuously a notice incised or embossed on metal, plastic or similar permanent material in the following form, stating the imposed load for which the floor has been designed, letters to be at least $\frac{1}{4}$ inch high.

NOTICE

This floor has been designed to sustain an imposed load of.....lbs per square foot.

(ii) Where floors of different rooms or different parts of floors have been designed for different imposed loads, a notice in the above form shall be suitably displayed in

each room or on each part of the floor as the case may be indicating the variations.

- Steel, reinforced concrete and timber. 74. Where steel, reinforced concrete or timber is used in floor construction the design shall be in accordance with Building Regulations Nos. 60, 61 and 62 respectively.
- Floor finishes. 75. Every floor shall be finished in a manner adequate for its intended use.
- Impervious floors. 76. (i) The floor of every factory and warehouse intended to be used for the manufacture or storage of articles for human consumption shall be constructed of impervious material.
- (ii) The floor of every garage shall be constructed of impervious material.

Section (vii) Staircases and Lifts.

- Pitch of staircases. 77. (i) The rise shall normally not be more than 7 inches and the tread shall not be less than 9 inches.
- (ii) In houses occupied by not more than one household $7\frac{1}{2}$ inches risers will be permitted.
- Handrails. 78. (i) All staircases shall be provided with a handrail or handrails.
- (ii) In non-residential buildings a handrail shall be provided on each side of the staircase when the staircase is 5 feet wide clear and over. Where a staircase is 10 feet wide or more, there shall be provided in addition a handrail down the centre of the stair.
- Maximum flight. 79. There shall not be more than 15 risers between each landing. A landing shall not be less than 3 feet in depth.
- Winders. 80. Winders may be permitted in residential buildings other than blocks of flats.
- Limitation in the use of timber staircases. 81. (i) Timber staircases are permissible only for residential buildings occupied by not more than one household.
- (ii) All other staircases shall be of reinforced concrete or other non-inflammable material.
- Lifts. 82. Lifts shall be provided in buildings where the climbing height from the ground floor level to the top floor level exceeds 42 feet and 6 inches.

Section (viii) Roofs.

Timber.

83. (i) Framings:

Timber for roof construction shall be of adequate sizes and properly framed in accordance with Building Regulation No. 62.

(ii) Preservative:

All built-in or hidden roof timbers shall be protected against damp and insect attack by treatment with a suitable preservative.

- the-
design.
ely.
- Steel and reinforced concrete. (iii) Where steel work or reinforced concrete is used in roof construction the design shall be in accordance with Building Regulations Nos. 60 and 61 respectively.
- Special types of construction. 84. Any other type of roof construction not specified in these Building Regulations shall require special sanction of the Authority.
- Roof covering. 85. (i) On pitched roofs the following materials only may be used:
- Burnt clay or concrete tiles.
 - Slates.
 - Metal or asbestos cement sheets.
 - Glass.
 - Other materials approved by the Authority.
- Drainage. (ii) The roof of a building (whether flat or not) shall be so constructed as to effectually drain to suitable and adequate channels, gutters, chutes or troughs.
- Access to roof space. 86. Access shall be provided to the space within a pitched roof where such space is enclosed by a ceiling.
- Lightning conductors. 87. Lightning conductors, if provided, shall be of a type approved by the Authority, and shall be earthed and fixed in a manner approved by the Authority.

Section (ix) Refuse Chutes.

- Refuse chutes. 88. Refuse chutes shall be of a type approved by the Authority and shall conform with the following minimum requirements:
- (a) They shall be formed with glazed pipes or asbestos cement pipes of at least 12 inches internal diameter.
 - (b) All chutes shall be adequately ventilated at the top and shall be provided with suitable arrangements for flushing with water for the full length of the chute.
 - (c) All chutes shall discharge into a suitable moveable receptacle or receptacles of a size and pattern approved by the Authority.
 - (d) The chamber housing the receptacles at the foot of the chutes shall be drained and shall be adequately fly and vermin proof and shall open into the external air and shall be lined throughout with glazed tiles.
 - (e) The opening into the chutes from each floor shall be fitted with a self-closing hopper type flap.

Section (x) Flues and Chimneys.

- Chimneys. 89. (i) Every chimney included in a building shall be built on solid foundations and with footings similar to the footings of the wall against which such chimney is built and shall be properly bonded into such wall.

Provided that any such chimney may be built on sufficient corbels of brick, stone or other hard and incombustible materials if the work so corbelled out does not project from the wall more than the thickness of the wall measured immediately below the corbel.

Provided further that the chimney of an industrial and factory plant shall not be built nearer than 10 feet of the street line.

Chimney flues
to be pargetted
or rendered.

- (ii) The inside of every flue included in a building shall be properly rendered or pargetted as such flue is carried up unless the whole flue shall be lined with fire-brick or fire-proof piping of fire-clay at least one inch thick, and unless the spandrel angles shall be filled in solid with brick work or other incombustible material.

The back or outside of such flue, which shall not be constructed so as to form part of the outer face of an external wall, shall be properly rendered in every case where the brick work of such back or outside is less than nine inches thick.

Fire brick
lining.

- (iii) Every flue included in a building and intended for use in connection with any furnace of copper, steamboiler or close fire constructed for any purpose of trade, business or manufacture or in connection with any cooking range or cooking apparatus of such building when occupied as a hotel, tavern or eating house shall be surrounded with fire-brick at least four and a half inches thick for a distance of ten feet at least in height from the floor on which such furnace of copper, steamboiler, close fire, cooking range or cooking apparatus may be constructed or placed.

Factory
Chimney
shafts:
Construction.

90. (i) Building Regulations 90 to 93 shall apply to chimney shafts which are structurally independent and erected in connection with any factory or place in which steam, water or other mechanical power is to be employed.

- (ii) A shaft and its foundations shall be designed and constructed in accordance with the following provisions of this Building Regulation.

- (iii) The appropriate limits of stress for the materials of which the shaft is constructed shall not be exceeded when the shaft is subjected to a horizontal wind pressure (as modified by the appropriate shape factor specified in the following Table) of—

- (a) 12 pounds per square foot if the height of the shaft does not exceed 40 feet;
- (b) 14 pounds per square foot if the height of the shaft does not exceed 50 feet;
- (c) 15 pounds per square foot if the height of the shaft does not exceed 60 feet;
- (d) 17 pounds per square foot if the height of the shaft does not exceed 80 feet;
- (e) 18 pounds per square foot if the height of the shaft does not exceed 100 feet;
- (f) 19 pounds per square foot if the height of the shaft does not exceed 120 feet;
- (g) 21 pounds per square foot if the height of the shaft does not exceed 140 feet;
- (h) 22 pounds per square foot if the height of the shaft does not exceed 160 feet;
- (i) 23 pounds per square foot if the height of the shaft does not exceed 180 feet;
- (j) 24 pounds per square foot if the height of the shaft exceeds 180 feet;

and the shaft shall be capable of resisting, without overturning, a wind pressure (as so modified) of one-and-a-half times that specified for its height in this paragraph.

Table

Plan shape of structure	Factor
Circular .. .. .	.7
Octagonal	1.0
Square (wind perpendicular to diagonal)	1.0
Square (wind perpendicular to face)	1.3

(iv) For the purposes of paragraph (iii) of this Building Regulation, the wind pressure shall be assumed to be acting uniformly over the whole height of the shaft, the total lateral force being taken as the product of the wind pressure and the maximum vertical projected area.

(v) The base of the shaft shall rest upon solid undisturbed rock, or upon some suitable foundation so constructed that when the shaft is subject to the wind pressure specified for its height and shape by paragraph (iii) of this Building Regulation the pressure on the ground under the foundation does not exceed the safe bearing capacity of the ground.

Shafts constructed of brickwork.

91. (i) A shaft constructed of brickwork shall be deemed to be designed and constructed in accordance with paragraphs (iii) to (v) of Building Regulation No. 90 if it complies with the following provisions of this Building Regulation.

(ii) The bricks shall be hard and well-burnt clay bricks, or sand lime bricks being bricks described as Class A in British Standard 107, and they shall be properly bonded and solidly put together with mortar.

(iii) Where the horizontal section of the shaft is circular or in the form of a regular polygon, the external diameter or least width at its base shall be not less than one-twelfth of the height of the shaft.

(iv) Where the horizontal section of the shaft is rectangular the lesser width at its base shall be not less than one-tenth of the height of the shaft.

(v) The thickness of the brickwork shall be not less than eight-and-a-half inches at the top of the shaft and for not more than twenty feet below the top and shall be increased by not less than four inches for each additional twenty feet or part of twenty feet of the height of the shaft measured downwards.

(vi) The shaft shall have a batter of not less than two-and-a-half inches in every ten feet.

(vii) Any footings provided at the base of the shaft shall—

(a) project in every direction from the base for not less than two-thirds of the thickness of the brickwork of the shaft at the base;

(b) be in height not less than one and one-third times their projection;

(c) be either in regular offsets from the base or in one offset;

(d) be built solid to the level of the base.

(viii) The footings or the base of the shaft shall rest upon a suitable and sufficient foundation.

(ix) Where the footings or the base of the shaft rest upon cement concrete and the

bearing capacity of the ground under the concrete is not inferior to that of firm clay, the requirements of the last preceding paragraph of this building regulation shall be deemed to be satisfied if—

- (a) the projection of the concrete in every direction from the base of the shaft is not less than one-and-a-half times the thickness of the brickwork at the base;
 - (b) the thickness of the concrete is not less than one and one-third times the projection of the concrete beyond the footings or beyond the base if footings are not provided; and—
 - (c) the concrete is composed of cement and well-graded aggregate in the proportion of one hundred and twelve pounds of cement to not more than twelve-and-a-half cubic feet of well-graded aggregate.
- (x) Where an opening is formed in the side of a shaft the sides of the opening shall be strengthened to offset any loss of strength due to the formation of the opening.

Shafts constructed of masonry.

92. (i) A shaft constructed of cut stone masonry shall be deemed to be designed and constructed in accordance with paragraphs (iii) to (v) of Building Regulation No. 90 if it complies with the following provisions of this building regulation.

(ii) Every such chimney shall be built of a diameter at the base of not less than one-twelfth of the height and for a height of at least twenty feet from its base every such chimney shall be lined in the following manner, that is to say, the shaft shall be provided with an independent lining of fire-bricks, separated from the masonry enclosing the shaft by a cavity at least one inch in width and every such cavity shall be covered at the top with corbelled brick work.

(iii) The batter of every such chimney shall be not less than one-third of an inch to the foot.

(iv) Where the inside diameter of the chimney at the top does not exceed four feet and six inches, the thickness of the masonry shall be as follows:

- (a) From the top of the chimney to the level of twenty-five feet below the top, it shall be twelve inches thick.
- (b) From the level of twenty-five feet below the top of the chimney to the level of fifty feet below the top, it shall be eighteen inches thick.
- (c) For each further space of twenty-five feet below the level of fifty feet from the top, the thickness shall be in like manner further increased to the extent of six inches.

(v) Where the inside diameter of the chimney at the top exceeds four feet and six inches, the thickness of the masonry shall be as follows:

- (a) From the top of the chimney to the level of twenty-five feet below the top, it shall be eighteen inches thick.
- (b) From the level of twenty-five feet below the top, it shall be two feet thick.
- (c) For each further space of twenty-five feet below the level of fifty feet from the top, the thickness shall be in like manner further increased to the extent of six inches.

Shafts constructed of reinforced concrete.

93. Where reinforced concrete is used in chimney shaft construction the design shall be in accordance with Building Regulation No. 61.

PART 4—DRAINAGE AND SANITARY PROVISIONS.

Section (i) Drainage.

- Karachi Municipal Corporation Regulations. 94. All drainage and sanitary installations shall be carried out in accordance with the Karachi Municipal Corporation Regulations for drainage, plumbing and sanitary fittings.
- Connection to public sewer. 95. Where there is a public sewer all sullage water shall be connected thereto.
- Cesspools
Septic tanks
Soak pits. 96. (i) Where no public sewer is in existence all sullage water shall be connected to cess pools or septic tanks.
(ii) Where no public sewer is in existence all waste water may be connected to soak pits.
(iii) Cesspools and septic tanks shall—
(a) be so constructed as to be impervious to liquid either from the outside or inside.
(b) be so sited as not to render liable to pollution any spring or stream of water or any well the water from which is used or likely to be used for drinking or domestic purposes subject to a minimum distance of 20 ft.
- Roofs and balconies. 97. The roof of every building and the floor of balconies abutting a street or constructed over a street shall be drained by means of gutters and down pipes to the satisfaction of the Authority.

Section (ii) Sanitary Provisions.

- Residential. 98. (i) Residential.
(a) Every dwelling shall have at least one Latrine or W.C. and one bathroom.
(b) Single room tenements shall have one Latrine or W.C. and one bathroom per five tenements subject to a minimum provision of two W.C.'s or Latrines.
(c) In the case of servant's quarters attached to dwelling houses one W.C. or Latrine and one bathroom shall be sufficient for every five quarters.
- Hotels. (ii) Hotels, Boarding Houses and Guest Houses.
For every ten bedrooms or less there shall be provided at least two W.C.'s or Latrines and two bathrooms.
- Dormitories. (iii) Dormitories.
For every 20 persons there shall be provided at least two W.C.'s or Latrines and one bathroom.
- Offices, stores and factories. (iv) Offices, Departmental Stores and Factories.
For every 25 persons upto 100 persons there shall be provided one W.C. or Latrine and one Urinal and one additional W.C. or Latrine plus one Urinal for every 50 persons in excess of 100 persons.
Ablution facilities.
One wash basin or equivalent washing trough space per 25 or less persons.

The above figures refer to staff only. If provision is to be made for the public, this must be in addition to the above.

Shops.

(v) **Shops and Stalls:**

Communal sanitary facilities shall be provided at the discretion of the Authority. Shops of a floor area of 400 sq. ft. and more shall have a minimum of one W.C. or Latrine and one draw off tap on the premises.

Places of public assembly.

(vi) **Places of public assembly:**

Males—

One W.C. and two urinals for every 200 persons or part thereof.

Females—

One W.C. for every 100 persons or part thereof.

In each room provided for sanitary purposes there shall be at least one wash basin.

Schools.

(vii) **Schools:**

Boys—

Two W.Cs. and three urinals per 100.

Girls—

Three W.Cs. for the first 50.

Two W.Cs. for each subsequent 50.

Ablution facilities—

One wash basin or equivalent washing trough space per 25 pupils.

Hospitals.

(viii) **Hospitals:**

At least one W.C., one wash basin and one bath for every 10 persons (patients and staff).

Latrines, W.Cs. and bathrooms: walls and floors.

99. (i) All walls of W.Cs. and bathrooms shall be finished in cement mortar or other impervious material to a minimum height of 4 feet. All floors to W.Cs. and bathrooms shall be paved in concrete with cement rendering or other impervious approved material laid in the case of bathrooms with proper falls to an approved outlet.

(ii) Every latrine shall be constructed of brick, concrete or other impervious approved material.

(iii) Where there is no water carriage system latrines shall be separated from the main buildings by cross ventilated passages not less than 3 feet wide or be accommodated in separate buildings.

Section (iii) Wells.

Wells.

100. A well constructed in connection with a building and intended to supply water for human consumption shall comply with the following provisions—

(a) The well shall be so situated as not to be liable to pollution, subject to a minimum distance of 20 ft. from any cesspool, soak pit and septic tank.

- (b) The ground adjoining the well shall for a distance of not less than four feet in every direction be covered with a watertight paving constructed so as to slope away from the well.
- (c) The sides of the well shall be rendered impervious for such a depth as to prevent contamination through the adjoining ground. This will normally be a depth of six feet.
- (d) A dug well shall be so constructed as to be readily accessible for cleansing and the opening shall be guarded by a railing or parapet at least 2'-6" high.
- (e) The top of a dug well shall be surrounded by a curb extending not less than six inches above the level of the paving required by paragraph (b) of this building regulations and so constructed as to prevent any surface water gaining access to the well.
- (f) The lining tubes to a bored well shall project not less than six inches above the level of the paving required by paragraph (b) of this building regulation and such projection shall be surrounded with concrete not less than six inches thick or with other adequate means of protection for its full height.
- (g) A well from which water is drawn by a bucket shall be provided with an efficient hinged wooden or iron or other suitable cover which will close the well when not in use.
- (h) A well from which water is drawn by a pump shall be provided with a cover so fitted as to prevent surface water or other matter from gaining access to the well.

PART 5—FIRE RESISTANCE AND FIRE PRECAUTIONS.

Section (i) Fire Resistance—General.

- Schedule No. 3. 101. A structural part of a building shall be deemed to have the requisite fire resistance if it is so constructed as to have a period of fire resistance not less than the appropriate period specified in Schedule No. 3.

Until such time, when an appropriate Pakistan Standard Specification has been drafted, the fire resistance of building materials shall be ascertained from British Standard 476: Fire Tests on Building Materials.

Section (ii) Fire Resistance—Small Houses.

- Small houses definition. 102. A "small house" for the purpose of these building regulations shall be a house of up to 18000 Cuft. capacity on not more than two storeys and occupied by only one household and the servants quarters attached thereto.

- External walls (small houses). 103. Every external wall of a small house shall comply with Table A.

TABLE A.

(1)		(2)
Distance of wall in feet from nearest boundary of premises		Appropriate requirements as to non-inflammability and fire resistance.
Not less than	Less than	
10	—	No requirement.
5	10	To be externally non-inflammable.
3	5	To be non-inflammable throughout.

- Separating walls (small houses). 104. A wall separating two small houses shall have a fire resistance of one hour.
- Where the external walls of small houses are of timber or other inflammable material, the walls separating such houses shall—
- have a fire resistance of two hours.
 - extend not less than nine inches beyond the outer surface of the external walls.

No inflammable material shall be built into a separating wall other than the ends of wooden joists or purlins which are properly protected by brickwork or other solid and non-inflammable material not less than four inches thick.

In every small house all load bearing walls not already referred to in these building regulations shall have a fire resistance of half-an-hour.

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Section (iii) Fire Resistance: Buildings other than small houses.

External walls
(other than
small houses).

105. (i) The external walls of any building other than a small house shall be non-inflammable throughout and have a fire resistance of two hours.
- (ii) Every external wall of a domestic or public building of one storey, not being a small house, shall comply with the requirements of Table B.

TABLE B

Capacity of building in cubic feet		Distance of wall in feet from nearest boundary of premises		Appropriate requirements as to non-inflammability and fire resistance.
Not less than	Less than	Not less than	Less than	
—	18,000	10 5 3	— 10 5	No requirement. To be externally non-inflammable. To have a fire resistance of one hour.
18,000	36,000	20 10 5	— 20 10	No requirement. To be externally non-inflammable. To have a fire resistance of one hour.
36,000	—	10	—	To be externally non-inflammable and, unless it is an office building more than 30 feet from the nearest boundary of the premises, to have a fire resistance of one hour.

- (iii) Every external wall of a building of the warehouse class not intended to be used wholly or predominantly for storage and comprising only one storey shall comply with Table C.

TABLE C

(1) Distance of wall from nearest boundary of premises.		(2) Appropriate requirements as to non-inflammability and fire resistance.
Not less than	Less than	
20 feet or a distance equivalent to half the height of the building (whichever is the greater)	40 feet or a distance equivalent to the height of the building (whichever is the greater).	To have a fire resistance of one hour.
40 feet or a distance equivalent to the height of the building (whichever is the greater).	—	To be externally non-inflammable.

- (iv) Every external wall of a building of the warehouse class intended to be used wholly or predominantly for storage shall, if the capacity of the building exceeds 250,000 cubic feet or if its height exceeds 75 feet, be non-inflammable throughout and have a fire resistance of four hours.

Provided that where a building is completely separated into two or more parts by fire division walls the provision of this building regulation shall apply as if each part were a separate building.

Provided that the fire resistance in the case of buildings of the warehouse class intended solely for the storage of non-inflammable goods may be reduced at the discretion of the Authority.

- (v) Where an external wall of a domestic building of two or more storeys (other than a shop or small house) is a panel wall supported in a structural frame of metal or reinforced concrete and is constructed of non-inflammable material and is not less than ten feet or a distance equivalent to half the height of the building (whichever is the greater) from the nearest boundary of the premises, the frame and panels shall have a fire resistance of one hour.

Separating walls.
(other than small houses)

106. Walls separating buildings other than small houses or flats shall be non-inflammable throughout and shall have for the separation of domestic buildings other than shops a fire resistance of four hours and in any other case six hours.

No inflammable material shall be built into a separating wall other than the ends of wooden joists or purlins which are properly protected by brickwork or other solid and non-inflammable material not less than four inches thick.

Fire division walls.

107. Fire division walls in buildings of the warehouse class for use wholly or predominantly for storage shall have a fire resistance of four hours. In any other building they shall have a fire resistance of two hours.

Any opening in a fire division wall shall be protected by doors or shutters having a fire resistance of half the period required for that of the wall.

Walls separating flats.

108. Walls constructed for the separation of flats shall be non-inflammable throughout and have a fire resistance of—

- (a) one hour if the building exceeds either fifty feet in height or 2500 square feet on any one storey in floor area.
(b) half an hour in any other case.

Floors, columns, beams and internal walls.

109. (i) In every building (other than a small house) which comprises more than one storey, every—

- (a) floor above the lowest storey;
(b) load bearing wall (other than an external wall), wall separating buildings or fire division wall;
(c) column and beam; and
(d) wall enclosing a common stairway or a lift shaft shall have a fire resistance as specified in Table D.

Table D

Provided that—

- (a) where more than one fire resistance period would be required according to

whether regard is had to the height or the floor area or capacity of the building the longest period shall apply.

(b) where a building is completely separated into two or more parts by fire division walls, each such part shall be treated as a separate building.

(ii) Every opening in an external wall enclosing a common stairway or a lift shall be protected by doors or shutters having a fire resistance of half the period required for the wall, but in no case less than half an hour.

(iii) In this building regulation—

“common stairway” means a stairway used by more than one family or occupier.

“floor area” means the floor area of any one storey in a building.

TABLE D.

Class of building (1)	Height, cubic capacity, floor area (of any one storey) (2)	Fire resistance (3)
Domestic buildings intended to be used wholly or predominantly for human habitation.	(a) Exceeding two storeys but not exceeding 50 feet in height, or (b) exceeding 1,000 square feet but not exceeding 2,500 square feet in floor area.	$\frac{1}{2}$ hour
	(a) Exceeding 50 feet in height, or (b) exceeding 2,500 square feet in floor area.	1 hour
Domestic buildings not intended to be used wholly or predominantly for human habitation.	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in capacity.	$\frac{1}{2}$ hour
	(a) Exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet in capacity.	1 hour
Public buildings and buildings of the warehouse class not used wholly or predominantly for storage.	(a) Not exceeding 50 feet in height, or (b) exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in capacity.	$\frac{1}{2}$ hour
	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet but not exceeding 250,000 cubic feet in capacity, and not exceeding 7,500 square feet in floor area.	1 hour
	(a) Exceeding 75 feet in height, or (b) exceeding 250,000 cubic feet in capacity, or (c) exceeding 7,500 square feet in floor area.	2 hours
Buildings of the warehouse class used wholly or predominantly for storage.	(a) Exceeding 25 feet but not exceeding 50 feet in height, or (b) exceeding 25,000 cubic feet but not exceeding 50,000 cubic feet in capacity.	$\frac{1}{2}$ hour
	Exceeding 50,000 cubic feet but not exceeding 125,000 cubic feet in capacity.	1 hour
	(a) Exceeding 50 feet but not exceeding 75 feet in height, or (b) exceeding 125,000 cubic feet but not exceeding 250,000 cubic feet in capacity and not exceeding 7,500 square feet in floor area.	2 hours
	(a) Exceeding 75 feet in height, or (b) exceeding 250,000 cubic feet in capacity or (c) exceeding 7,500 square feet in floor area.	4 hours

Section (iv) Fire Resistance: Miscellaneous Provisions.

- Openings in external walls.** 110. (i) In the case of a building, other than a house of not more than two storeys, where any part of an opening in an external wall is vertically above an opening in an adjoining storey, suitable provision shall be made to prevent the spread of fire from the lower to the upper opening.
- (ii) The requirements of this building regulation shall be deemed to be satisfied if—
- the bottom of the higher opening is not less than three feet above the top of the lower opening and not less than two feet above the upper surface of the floor separating the storeys; or
 - a balcony of non-inflammable material with a solid floor or some similar horizontal projection is constructed between the two openings to project two feet from the wall.
- Structural members supporting certain walls.** 111. Any part of a structural frame or any beam or column carrying an external wall, a wall separating buildings or a fire-division wall shall have the same fire resistance as that required by these building regulations for the wall it carries.
- Roofs.** 112. (i) In every building of the warehouse class, in every public building or house exceeding thirty-six thousand cubic feet in capacity and in every house forming part of a block of more than two houses the roof shall be so covered as to afford adequate protection against the spread of fire into the building or to adjoining buildings.
- (ii) In every building other than a building to which the preceding paragraph relates—
- the roof shall be so covered; or
 - the building shall be so isolated from other buildings;
- as to afford adequate protection against the spread of fire into the building or to adjoining buildings.
- (iii) A roof shall be deemed to satisfy the requirements of paragraphs (i) and (ii) of this building regulation if it is covered with any one or more of the following materials—
- natural slates or slabs of stone;
 - tiles or slabs of burnt clay or concrete;
 - slates, tiles or sheets of asbestos cement;
 - corrugated sheets of galvanized steel or of other not less suitable metal of an adequate thickness;
 - glass tiles or sheets or glass bricks or blocks in concrete or metal frames;
 - lead, copper, zinc or aluminium;
 - asphalt mastic containing not less than eighty-three per cent of mineral matter and laid not less than three-quarters of an inch thick on a suitable base;
 - asbestos based roofing felt which conforms with British Standard 747;

- (i) organic based roofing felt laid directly on a base of non-inflammable material not less than one-half inch thick;
- (j) organic based roofing felt covered with non-inflammable material not less than one-half inch thick, or with bituminous macadam composed of fine gravel or stone chippings with no greater percentage of bituminous material than seven per cent.
- (iv) A building shall be deemed to satisfy the requirements of paragraph (ii) of this building regulation if it is distant from the nearest boundary of the premises by not less than its height.
- Garages.** **113.** Every garage shall be constructed of non-inflammable materials having a fire resistance of half an hour.
- Habitable rooms over garages.** **114.** Where in a small house a habitable room or any part of a habitable room is situated immediately above a motor garage the following provisions shall be complied with:
- The ceiling of the garage shall be made of non-inflammable material having a fire resistance of half an hour.
- All walls separating the garage from the remainder of the building shall be made of non-inflammable material having a fire resistance of at least half an hour.
- An opening in any such wall shall at its lowest point be at least four inches above the level of the floor of the garage and shall be protected by self closing doors having a fire resistance of half an hour.
- Places of public assembly.** **115.** (i) Every building used as a place of public assembly shall be self-contained provided that if the place of public assembly forms part only of a building, the part used as a place of public assembly shall be completely separated by fire division walls from the rest of the building, shall have separate doors and shall in no way communicate with any other building or part of a building.
- (ii) Restaurants may be included in a place of public assembly provided they cannot be entered directly from the auditorium and provided the kitchens are situated to the satisfaction of the Authority.
- (iii) Any shop, dwelling or sleeping place situated in or forming part of a place of public assembly shall be completely shut off from the place of public assembly, its offices and passages by a brick, stone or concrete partition wall having a fire resistance of one hour.
- (iv) The floors of balconies or tiers shall be constructed entirely of reinforced concrete.
- Stages in theatres.** **116.** (i) In premises seating over 400 persons, in which scenery is employed (other than school halls or other similar halls where scenery is used infrequently), the stage shall be separated from the auditorium on either side of the proscenium opening by a fire-resisting wall of 9-inch brickwork or the equivalent, carried down to a solid foundation and up to at least 3 feet above the roof level unless the roof is of fire-resisting construction.
- (ii) Not more than two openings shall be provided in the proscenium wall in addition to the proscenium opening. No such additional opening to have an area exceeding twenty square feet. Each opening to be fitted with a door of half hour fire-resisting material.

(iii) A sprinkler system shall be provided for the whole of the fire risk behind the proscenium wall.

(iv) A fire resisting curtain shall be provided to the proscenium opening.

Cinema
projection
rooms.

117. (i) Cinematograph apparatus shall be operated or set up for operation only within an approved enclosure.

(ii) Cinematograph apparatus shall be contained in an enclosure outside the auditorium. The enclosure shall be constructed of fire-resisting material of two hours fire resistance. Minimum floor areas are 48 square feet for one projector with an additional 24 sq. ft. for each additional projector.

(iii) Two exits shall be provided to each enclosure, and these shall be outside the auditorium and each shall be fitted with a self-closing, close-fitting door of half hour fire resisting material opening outwards from the enclosure. No openings other than projection and observation apertures shall be permitted between the enclosure and the auditorium.

(iv) Two openings for each projector shall be provided; the observation port shall be not larger than 200 square inches and the projection port shall be not larger than 120 square inches. Where separate slide projectors, spot or flood light machines are installed in the same enclosure, not more than one opening for each such machine shall be provided both for the operator's vision and for the projection of the light. Such openings shall be as small as practicable and shall be protected by approved automatic shutters.

(v) Each opening shall be provided with an approved type of gravity shutter of half hour fire-resisting material set into guides not less than one inch at sides and bottom and overlapping the top of the opening by not less than one inch when closed. Shutters shall be suspended, arranged and interconnected so that all openings will close upon the operating of some suitable fusible or mechanical releasing device. There shall be provided suitable means for manually closing all shutters simultaneously from any projector head and from a point outside each exit door.

(vi) Enclosures used for the purpose of rewinding films and battery installations shall be provided and each shall be separate from the projecting enclosure.

(vii) All openings and joints in the enclosure shall be so constructed and maintained as to prevent as far as possible the escape of any smoke or noxious fumes into the auditorium.

(viii) All enclosures shall be provided with adequate means of ventilation by suitable openings or shafts of fire resisting material which shall lead to the open air.

Fire pre-
cautions in air
conditioning
systems.

118. (i) All air-conditioning or ventilation ducts including framing, except for ducts in detached and semi-detached houses, shall be constructed entirely of non-inflammable materials and shall be adequately supported throughout their length.

(ii) No air-conditioning ducts shall pass through fire division walls, party walls or adjoining external walls.

(iii) Where ducts pass through floors or walls not being fire division walls, party walls or adjoining external walls the space around the duct shall be sealed with rope asbestos, mineral wool or other non-inflammable material to prevent the passage of flames and smoke.

- (iv) The air intake of any air-conditioning apparatus shall be so situated that air shall not be recirculated from any space in which objectionable quantities of inflammable vapours or dust are given off and shall be so situated as to minimise the drawing in of inflammable material or other fire hazard.
- (v) Where duct systems serve two or more floors of a building or pass through walls or partitions not being fire division walls, party walls or adjoining external walls approved fire dampers with fusible links and access doors shall be located at the duct openings and such dampers shall be so arranged that the disruption of the duct will not cause failure to protect the openings.
- Stair wells.** **119.** Stair wells in buildings accommodating more than 250 persons above ground floor shall have a fire resistance of one hour and doors leading thereto shall have a fire resistance of half an hour.
- Extinguishment of fires.** **120.** Every new building (except residential buildings up to four storeys in height and except commercial and business premises up to four storeys in height and not exceeding 2,000 sq. ft. at first floor level) shall, if required by the Authority, be provided with sufficient means for extinguishing fires in the shape of—
- (a) fire fighting buckets.
 - (b) fire extinguishers.
 - (c) an independent water supply system in pipes of steel or cast iron with adequate hydrants, pumps and hose reels.

Z. A. HASHMI, K.B.
SECRETARY,
KARACHI DEVELOPMENT AUTHORITY.

SCHEDULE No. 1: FORMS OF APPLICATION AND CERTIFICATES.

The Authority may from time to time amend the forms appended or substitute other forms for them or add further forms as and when required.

KARACHI DEVELOPMENT AUTHORITY.
KARACHI BUILDING REGULATIONS, 1961.
(K. D. A. ORDER 1957)
APPLICATION FOR APPROVAL OF PLANS.

FORM A-1

To
The Karachi Development Authority,
Karachi.

Karachi : _____
(Date of delivery at
K.D.A. Office)

Dear Sirs,

I hereby apply for your permission to erect/re-erect/make additions to and/or alterations in/a building on Plot No.....Karachi in accordance with the Building Plans sent herewith (in triplicate) for your approval.

The following particulars are certified to be true:—

1. Plot held from.....
2. Reference of Title Deed.....
3. Intended use of proposed building.....
4. Description of the proposed building works.....
5. Nature of soil below foundation.....
6. Specification of foundation.....
7. Specification of plinth.....
8. Specification of superstructure.....
9. Specification of floor.....
10. Specification of roof.....
11. Method of Drainage and Sewerage.....
12. The Architect employed to prepare the plans and supervise the work—

Mr

Address

is hereby authorised by me to do all acts and things required to be done in this regard under the K.D.A. Order 1957 or Regulations framed thereunder for me and on my behalf.

Yours faithfully,

(Owner)

Address :

Karachi :.....

(date)

LICENSED ARCHITECT'S CERTIFICATE,

FORM A-2

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

This is to certify that the Building Plans submitted by.....
.....for Plot No.....have been prepared by me and that I
have undertaken to supervise the proposed construction. I further undertake that if I discontinue supervision
of the work, I shall give immediate intimation thereof to you.

Yours faithfully,

Licensed Architect.....

Karachi :.....
(date)

Licence No.....

KARACHI DEVELOPMENT AUTHORITY.
KARACHI BUILDING REGULATIONS, 1961.
(K. D. A. ORDER 1957)
NOTICE OF COMPLETION.

FORM B-1

Karachi,

(Date of delivery
at K.D.A. Office)

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

I hereby give notice of completion of the Building/additions and alterations in the Building on Plot No..... and of drainage and water supply arrangements therein and apply for your permission to occupy the said building.

The said work has been carried out in accordance with the Building Plans approved under your No. AC/BP..... dated.....

(Delete whatever is inapplicable)

Yours faithfully,

(Owner)

Address :

Karachi.....
(date)

LICENSED ARCHITECT'S CERTIFICATE

FORM B-2

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

I hereby certify that the Building/additions and alterations in the Building on Plot No..... has/have been completely/partly completed under my supervision and to my satisfaction in accordance with the Building Plans approved under the K.D.A. No. AC/BP..... dated.....

(Delete whatever is inapplicable)

Yours faithfully,

Licensed Architect

Karachi.....
(date)

Licence No.

KARACHI DEVELOPMENT AUTHORITY,
KARACHI BUILDING REGULATIONS, 1961.
(K. D. A. ORDER 1957)
WORKS CARRIED OUT WITHOUT PERMISSION.

FORM C-1

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

Whereas I have constructed.....
.....
.....on Plot No.....
as shown on the Plans attached herewith without your prior permission;

Whereas I have made deviations from the Building Plans approved under your No.....
dated.....in the course of construction of the Building/alterations and additions to the
Building on Plot No.....as shown on the Plans attached herewith;

Whereas I am willing to make any alterations required to be made in the said structure so as to make it
consistent with the provisions of the K.D.A. Order and Regulations;

It is, therefore, requested that the unauthorised and offensive nature of the said structure may be
condoned, the said plans may be approved and permission to occupy the said Building may be granted.
(Delete whatever is inapplicable)

Yours faithfully,

Owner

Address :

Karachi :.....
(date)

LICENSED ARCHITECT'S CERTIFICATE.

FORM C-2

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

I hereby certify that the existing structure on Plot No.....is consistent with
the provisions of the K.D.A. Order 1957 or Regulations framed thereunder;

And I further certify that the said existing structure has been fully and correctly shown on the Plans
submitted by.....along with those which have been prepared by me.

Yours faithfully,

Licensed Architect

Karachi :.....
(date)

Licence No.

KARACHI DEVELOPMENT AUTHORITY.
KARACHI BUILDING REGULATIONS, 1961.
(K. D. A. ORDER 1957)

FORM D

VERIFICATION OF BUILDING LINES.

To
The Karachi Development Authority,
Karachi.

Dear Sirs,

I hereby inform you that the first course of plinth of my building

on Plot No.....

Survey Sheet.....

Quarter.....

has been laid. You are, therefore, requested to depute an officer to verify the building line so as to enable me to carry on my building work.

Yours faithfully,

Owner

Address :

Karachi :

(date)

SCHEDULE NO. 2:

CALCULATION OF LOADING

- Dead load. 1. (a) In calculating dead load the unit weight of the materials shall be deemed to be those specified in the table below:

TABLE I

Weights of Materials

Earth (in natural state or rammed)	112 lbs. per cubic ft.
Sand (wet)	125 " "
Gravel	120 " "
Granite in masonry	165 " "
Brickwork in cement mortar	120 " "
Concrete (mass)	144 " "
Concrete (reinforced)	150 " "
Timber	50 " "
Cement plaster 1" thick	10 lbs. per sq. ft.
Glass per 1" thickness	14 " "
Asbestos Cement sheeting	4 " "
18 gauge galv. iron sheeting with bolts	3 " "

Other materials not specified above shall follow the values set out in B.S.S. No. 648.

- (b) The dead load of any partitions, whereof the positions are not definitely located in the design of the building, shall be deemed to be a uniformly distributed load per square foot of the floor (or part of a floor on which the partitions are to be erected) of not less than 20 lbs. per square foot or the actual calculated load whichever is the greater.
- Superimposed load. 2. In all cases the superimposed loads to be provided for shall be as specified in Table II and for slabs forming part of and for beams supporting such floors, roofs, stairs and landings shall be either
- the loads specified in the third column of that Table; or
 - the loads specified in the fourth column or the fifth column (as the case may be) of that Table; whichever shall be the heaviest.

TABLE II

Minimum Superimposed Loads

In this Table, a reference to a floor includes a reference to any part of that floor to be used as a corridor and "slabs" includes beams and ribs spaced not further apart than three feet between centres and "beams" means all other beams and ribs.

TABLE II—(Contd.)

Class No.	Types of floors	Pounds per sq. ft. of floor area	Slabs pounds uniformly distributed over the span per ft. width.	Beams pounds uniformly distributed over span
(1)	(2)	(3)	(4)	(5)
1.	Floors in dwelling houses of not more than two storeys designed for one occupation.	30	240	1,920
2.	Floors (other than those of Class No. (1)) for residential purposes including dwelling houses of more than one occupation, tenements, hospital wards, bedrooms and private sitting rooms in hotels, dormitories.	40	320	2,560
3.	Office floors above the entrance floor; floors of light workrooms without storage	50	400	3,200
4.	Floors of banking halls; office entrance floors and office floors below entrance floor; floors of classrooms in schools	60	480	3,840
5.	Shop floors used for the display and sale of merchandise; workrooms generally; garages for vehicles not exceeding 2½ tons gross weight; places of assembly with fixed seating; churches and chapels; restaurants, circulation space in machinery halls, power stations, etc., where not occupied by plant or equipment. . .	80	640	5,120
6.	Floors of warehouses, workshops, factories and other buildings or buildings of similar category for light-weight loads; office floors for storage and filling purposes; places of assembly without fixed seating, including public rooms in hotels, dance halls, etc. . .	100	800	6,400
7.	Floors of warehouses, workshops, factories and other buildings or parts of buildings of similar category for medium-weight loads, floors of garages for vehicles not exceeding 4 tons gross weight	150		
			For garage floors only 1.5 times the maximum wheel load but not less than 2,000 lbs. considered to be distributed over a floor area 2 ft. 6 in. square.	
8.	Floors of warehouses, workshops, factories and other buildings or parts of buildings of similar category for heavy weight loads; floors of book stores and stationery stores; roofs and pavement lights over basements projecting under the public foot path.	200	—	—
9.	Flat roofs	30	240	1,920

TABLE II—(Contd.)

Class No.	Types of floors	Pounds per sq. ft. of floor area	Slabs pounds uniformly distributed over the span per ft. width	Beams pounds uniformly distributed over span
(1)	(2)	(3)	(4)	(5)
10.	Pitched roofs (where no access is provided to the roof)	15	—	—
11.	Stairs and landings (lb. per sq. ft. of area measured horizontally)			
	(a) Used in connection with floors of Class No. 1 ..	30	—	—
	(b) Used in connection with floors of Class No. 2 ..	60	—	—
	(c) Used in connection with floors of any other classes ..	100	—	—

3. (a) In calculating the total load on any column, pier, wall or foundation the minimum superimposed loads for every floor specified in Table II may be deemed to be subject to the reductions specified in Table III.

TABLE III

Reductions of Minimum Superimposed Loads

Number of floors carried	Percentage reduction of minimum superimposed load
1	0
2	10
3	20
4	30
5 or more	40

- (b) The reductions specified in sub-paragraph (a) of this paragraph shall not apply with respect to:

- the floors of factories and workshops whereof the minimum superimposed load is less than 150 lbs. per square foot;
- the floors of warehouses, garages and any floor used for storage purposes,

- (c) No building or part of a building shall with respect to any moving load, be deemed to be capable of safely sustaining and transmitting same, unless all proper provision to the satisfaction of the Authority has been made for all dynamic effects.

Wind loading.

4. Wind loading on a building shall be calculated on the basis of the recommendations of British Code of Practice CP3, Code of Functional Requirements of Buildings, Chapter V, Loading.

SCHEDULE NO. 3

PERIODS OF FIRE RESISTANCE FOR CERTAIN
ELEMENTS OF CONSTRUCTION

TABLE A (1)

Walls and Partitions

In this Table:—

Class 1: Aggregate means foamed slag, pumice, blast furnace slag, crushed brick and burnt clay products, including expanded clay, well burned clinker, crushed limestone.

Class 2: Aggregate means flint, gravel, granite and all crushed natural stones other than limestone.

Construction and Materials (1)	Minimum thickness in inches (excluding plaster) for period of				
	6 hours (2)	4 hours (3)	2 hours (4)	1 hour (5)	$\frac{1}{2}$ hour (6)
Solid Construction:					
<i>Bricks of clay, concrete or sand lime:</i>					
No Plaster	8 $\frac{1}{2}$	8 $\frac{1}{2}$ *	8 $\frac{1}{2}$ **	4	4
<i>Concrete Blocks:</i>					
Class 1 Aggregate:					
No plaster			4	3	2 $\frac{1}{2}$
Plastered at least $\frac{1}{2}$ -inch thick on each side ..			4	2 $\frac{1}{2}$	2
Class 2 Aggregate:					
No plaster				4	3
Plastered at least $\frac{1}{2}$ -inch thick on each side ..			4	3	2
<i>Gypsum blocks:</i>					
No plaster			4	3	2
Plastered at least $\frac{1}{2}$ -inch thick on each side ..			3	2	2
<i>Wood Wool Slabs:</i>					
Plastered at least $\frac{1}{2}$ -inch thick on each side ..			3	2	2

*Where plastered at least $\frac{1}{2}$ -inch thick on each side with gypsum/vermiculite plaster not leaner than 1:2 and where the wall does not exceed 10 feet either in height or length, the thickness for this period may be 4 inches.

**Where plastered at least $\frac{1}{2}$ -inch thick on each side and where the wall does not exceed 10 feet either in height or length, the thickness for this period may be 4 inches.

TABLE A (1)—(Contd.)

Construction and Materials (1)	Minimum thickness in inches (excluding plaster) for period of				
	6 hours (2)	4 hours (3)	2 hours (4)	1 hour (5)	$\frac{1}{2}$ hour (6)
Solid Construction—contd.					
<i>Reinforced concrete:</i>					
Aggregate with reinforcement (in two layers in walls over 5 inches in thickness) in two directions spaced not further apart than 6 inch centres, the volume of which is not less than 0.2 per cent of the volume of the concrete, with minimum concrete cover of 1 inch	9	7	4	3	3
<i>Plaster Board:</i>					
Supported at top and bottom edges in steel channels and plastered on each side at least 5/8-inch thickness with gypsum plaster				$\frac{1}{2}$	
<i>Glass Bricks:</i>					
In panels not exceeding 40 square feet in area with expansion joints not less than 1/10-inch per foot width of the panel at each side of the panel, not less than 1/10-inch per foot of the height of the panel at the top of the panel				4	
Hollow Block Construction:					
<i>Clay Blocks:</i>					
Plastered at least $\frac{1}{2}$ -inch thick on each side and shells not less than $\frac{1}{4}$ -inch thick:—					
1 cell in each block and each block not less than 50 per cent solid				4	3
1 cell in each block and each block not less than 30 per cent solid				6	
2 cells in each block and each block not less than 50 per cent solid			$3\frac{1}{2}$	4	
2 cells in each block and each block not less than 30 per cent solid				6	
<i>Concrete Blocks:</i>					
Plastered at least $\frac{1}{2}$ -inch thick on each side and 1 cell in wall thickness:					
Class 1 Aggregate		$8\frac{1}{2}$	$4\frac{1}{2}$	3	$2\frac{1}{2}$
Class 2 Aggregate				$8\frac{1}{2}$	3

TABLE A (1)—(Contd.)

Construction and Materials (1)	Minimum thickness in inches (excluding plaster) for period of				
	6 hours (2)	4 hours (3)	2 hours (4)	1 hour (5)	$\frac{1}{2}$ hour (6)
Hollow Block Construction—Contd.					
<i>Gypsum blocks:</i>					
Not less than 70 per cent solid:					
No plaster			4	3	2
Plastered at least $\frac{1}{2}$ -inch thick on each side ..			3	2	2

TABLE A (2)

Hollow Stud Partitions

Construction and Materials (1)	Minimum thickness of plaster in inches on each face for period of—			
	4 hours (2)	2 hours (3)	1 hour (4)	$\frac{1}{2}$ hour (5)
Steel or Timber Studding:				
<i>Plaster on metal or timber lathing:</i>				
Portland cement plaster, portland cement-lime plaster or gypsum plaster			$\frac{3}{8}$	$\frac{1}{2}$
<i>Plaster board with or without gypsum plaster:</i>				
$\frac{3}{8}$ -inch thick plaster board on each side				$\frac{3}{16}$ (one single coat)
$\frac{3}{8}$ -inch thick perforated plaster board on each side ..			$\frac{1}{2}$	
Two $\frac{3}{8}$ -inch thick plaster boards on each side ..			Nil	
$\frac{1}{2}$ -inch thick plaster board on each side			$\frac{3}{8}$	Nil
$\frac{1}{2}$ -inch thick plaster board on each side			Nil	

TABLE B.

FLOORS.

Construction and Materials (1)	Minimum thickness in inches for				
	period of 4 hours (2)	period of 2 hours (3)	period of 1 hour (4)	period of $\frac{1}{2}$ hour (5)	periods specifi- ed for small houses (6)
Filler Joint Construction:					
Thickness of concrete	6	5	4	$3\frac{1}{2}$	
Concrete cover on bottom of joist	1	1	$\frac{1}{2}$	$\frac{1}{2}$	
Solid Reinforced Concrete Construction: (including flat slab construction and floors constructed of pre-cast inverted "U", channel or T-sections, without a ceiling or soffit):					
Thickness of concrete	6	5	4	$3\frac{1}{2}$	
Concrete cover to reinforcement	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
Hollow Block Floor Construction: (including floors constructed of pre-cast concrete units of box-section or I-section):					
Aggregate thickness of non-inflammable material (excluding ceiling finishes, if any)	5	$3\frac{1}{2}$	3	$2\frac{1}{2}$	
Concrete cover to reinforcement	1	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	
Structural Timber Construction:					
(A) Plain edge boarding on timber joists not less than $1\frac{1}{2}$ inches wide with ceiling of:					
(i) Timber lath and plaster. Thickness of plaster.					$\frac{5}{8}$
(ii) Timber lath and plaster with plaster of minimum thickness of $\frac{5}{8}$ inch covered on underside with plaster-board of thickness					$\frac{1}{2}$
(iii) Metal lath and plaster. Thickness of plaster					$\frac{5}{8}$
(iv) One layer of plasterboard of thickness ..					$\frac{1}{2}$
(v) One layer of plasterboard of minimum thickness of $\frac{3}{8}$ -inch finished with gypsum plaster of thickness					$\frac{1}{2}$
(vi) One layer of plasterboard of minimum thickness of $\frac{1}{2}$ -inch finished with gypsum plaster of thickness					$\frac{1}{2}$
(vii) Two layers of plasterboard of total thickness					1

TABLE B—(Contd.)

Construction and Materials (1)	Minimum thickness in inches for				
	period of 4 hours (2)	period of 2 hours (3)	period of 1 hour (4)	period of $\frac{1}{2}$ hour (5)	periods speci- fied for small houses (6)
Structural Timber Construction—contd.					
(viii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ -inch finished with gypsum plaster of thickness					$\frac{1}{4}$
(ix) Wood-wool slab 1 inch thick finished with gypsum plaster of thickness				$\frac{3}{16}$	
(B) Tongued and grooved boarding not less than $\frac{3}{4}$ -inch (nominal) thickness on timber joists not less than $1\frac{1}{2}$ -inches wide with ceiling of:—					
(i) Timber lath and plaster. Thickness of plaster					$\frac{5}{8}$
(ii) Timber lath and plaster with plaster of minimum thickness of $\frac{5}{8}$ -inch covered on underside with plasterboard of thickness				$\frac{3}{8}$	
(iii) Metal lath and plaster. Thickness of plaster				$\frac{5}{8}$	
(iv) One layer of plasterboard of thickness					$\frac{3}{8}$
(v) One layer of plasterboard of minimum thickness of $\frac{1}{2}$ -inch* finished with gypsum plaster of thickness				$\frac{3}{16}$	
(vi) Two layers of plasterboard of total thickness				$\frac{7}{8}$	
(vii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ -inch finished with gypsum plaster of thickness				$\frac{3}{16}$	
(viii) Wood-wool slab 1 inch thick finished with gypsum plaster of thickness				$\frac{3}{16}$	
(C) Tongued and grooved boarding not less than 1 inch (nominal) thickness on timber joists not less than 7 inches deep by 2 inches wide with ceiling of:—					
(i) Timber lath and plaster. Thickness of plaster				$\frac{5}{8}$	
(ii) Metal lath and plaster. Thickness of plaster				$\frac{5}{8}$	

TABLE B—(Contd.)

Construction and Materials (1)	Minimum thickness in inches for				
	period of 4 hours (2)	period of 2 hours (3)	period of 1 hour (4)	period of $\frac{1}{2}$ hour (5)	periods speci- fied for small houses (6)
Structural Timber Construction—(contd.)					
(iii) One layer of plasterboard of thickness ..					$\frac{3}{8}$
(iv) One layer of plaster-board of minimum thickness of $\frac{3}{8}$ -inch finished with gypsum plaster of thickness				$\frac{1}{2}$	
(v) One layer of plaster-board of minimum thickness of $\frac{1}{2}$ -inch finished with gypsum plaster of thickness				$\frac{3}{16}$	
(vi) Two layers of plasterboard of total thickness				$\frac{1}{2}$	
(vii) One layer of insulating board of thickness					$\frac{1}{2}$
(viii) One layer of insulating board of minimum thickness of $\frac{1}{2}$ -inch finished with gypsum plaster of thickness				$\frac{1}{2}$	
(ix) Wood wool slab 1 inch thick finished with gypsum plaster of thickness				$\frac{3}{16}$	

TABLE C

Steel Columns and Beams

In this Table:

SOLID PROTECTION means casing which is bedded close up to the steel without any intervening cavities and with all joints in that casing made full and solid.

HOLLOW PROTECTION means that there is a void between the protective material and the steel. All hollow protection to columns shall be effectively sealed at each floor level.

REINFORCEMENT. Where reinforcement is required in this Table, that reinforcement shall consist of steel binding wire not less than No. 13 S.W.G. in thickness, or a steel mesh weighing not less than 1 lb. per square yard. In concrete protection the spacing of that reinforcement shall not exceed 12 inches in any direction.

Construction and Materials	Minimum thickness of protection in inches for period of—			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Solid Protection				
<i>Columns</i>				
Reinforced concrete	2½*	2*	1	1
Solid bricks of burnt clay or sand lime	3	2	2	2
Solid block reinforced in every horizontal joint				
(i) Foamed slab or pumice concrete	2½	2	2	2
(ii) Gypsum blocks	2	2	2	2
Sprayed asbestos	2	1	$\frac{1}{2}$	$\frac{1}{2}$
<i>Beams</i>				
Reinforced concrete	2½**	2**	1	1
Sprayed asbestos	2	1	$\frac{1}{2}$	$\frac{1}{2}$
Hollow Protection				
<i>Columns</i>				
Solid bricks of burnt clay or sand lime reinforced in every horizontal joint	4½	3	2	2
Solid bricks of foamed slag or pumice concrete or gypsum reinforced in every horizontal joint	3	2	2	2
Moulded asbestos bound in position with nicrome wire not less than No. 16 S.W.G. in thickness, the wires to be sunk not less than 1/8-inch deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	2½	1½	1	1

*The thickness of protection on any projecting cleat, projecting rivet head and the like need not exceed 1 inch.

**The thickness of protection on the upper surface of the upper flange of an internal beam, and on any projecting cleat, protecting rivet head and the like need not exceed 1 inch.

TABLE C—(Contd.)

Construction and Materials	Minimum thickness of protection in inches for period of—			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Hollow Protection—Contd.				
Portland cement plaster or Portland cement lime plaster on metal lathing				$\frac{1}{4}$
Portland cement plaster or Portland cement lime plaster on metal lathing with reinforcement over rendering coat ..			1	
Gypsum plaster on metal lathing			$\frac{7}{8}$	$\frac{5}{8}$
Gypsum plaster on $\frac{3}{8}$ -inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch			$\frac{1}{2}$	
Gypsum plaster on $\frac{3}{4}$ -inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch		$\frac{1}{2}$		
Two layers of metal lathing plastered with gypsum plaster on each layer, each	$\frac{3}{4}$			
Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland cement, reinforced with expanded metal, wire mesh or with No. 16 S.W.G. wire binding at 4 inches pitch			1	
Beams				
Moulded asbestos bound in position with nicrome wire not less than No. 16 S.W.G. in thickness, the wires to be sunk in grooves not less than $\frac{3}{8}$ -inch deep in the outer surface of the asbestos and the grooves and all joints in the asbestos to be filled with refractory cement	$2\frac{1}{2}$	$1\frac{1}{2}$	1	1
Portland cement plaster or Portland cement lime plaster on metal lathing				$\frac{3}{4}$
Portland cement plaster or Portland cement lime plaster on metal lathing with reinforcement over the rendering coat ..			1	
Gypsum plaster on metal lathing		$\frac{7}{8}$	$\frac{5}{8}$	
Gypsum plaster on $\frac{3}{8}$ -inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch			$\frac{1}{2}$	
Gypsum Plaster on $\frac{3}{8}$ -inch gypsum board supported on wood battens				$\frac{3}{16}$ (neat single coat)
Gypsum plaster on $\frac{3}{4}$ -inch gypsum plaster board with No. 16 S.W.G. wire binding at 4 inches pitch		$\frac{1}{2}$		

TABLE C—(Contd.)

Construction and Materials	Minimum thickness of protection in inches for period of—			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Hollow Protection—Contd. <i>Beams—contd.</i> Precast concrete consisting of 4 volumes of vermiculite to 1 volume of Portland cement reinforced with expanded metal, wire mesh or with No. 16 S.W.G. wire binding at 4 inches pitch			1	

TABLE D

Reinforced Concrete Columns and Beams

Construction and Materials	Minimum overall size of column in inches for period of			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Reinforced concrete columns		12	10	8
Reinforced concrete columns with light 2 inch mesh reinforcement placed centrally in the concrete cover to longitudinal reinforcement	12	10		
	Minimum concrete cover to reinforcement in inches for period of			
	4 hours	2 hours	1 hour	$\frac{1}{2}$ hour
Reinforced concrete beams	$2\frac{1}{2}$	2	$1\frac{1}{2}$	1

SCHEDULE NO. 4

The following British Codes of Practice and British Standard Specifications have been referred to in these buildings regulations.

- CP3** .. Code of Functional Requirements of Buildings, Chapter V: Loading.
- CP111** .. Structural recommendations for load bearing walls.
- CP112** .. The structural use of timber in buildings.
- CP113** .. The structural use of steel in buildings.
- CP114** .. The structural use of normal reinforced concrete in buildings.
- BSS187** .. Bricks.
- BSS449** .. The use of structural steel in building.
- BSS476** .. Fire tests on building materials.
- BSS648** .. Weights of materials.
- BSS747** .. Asbestos based roofing felt.

It is intended to replace these Codes of Practice and Standard Specifications by Pakistani Codes and Specifications as soon as drafted.

SCHEDULE NO. 5.

RATES OF SCRUTINY FEES.

1. The scrutiny fee shall be charged on the cost of construction for which the plan is scrutinised in accordance with the following schedule of rates:

Cost of Building		Rate of fee per Rs. 1,000/- of the cost of building.
from Rs.	up to Rs.	
—	5,000/-	Nil
5,001/-	10,000/-	Rs. -/8/-
10,001/-	20,000/-	" -/12/-
20,001/-	50,000/-	" 1/-/-
50,001/-	1,00,000/-	" 1/8/-
1,00,001/-	Any amount	" 2/-/-

2. The cost of construction for the purpose of charging the fee shall be assessed at the rate of Rs. 10/- per square foot of the area shown on plans as built-up on the ground floor and at the rate of Rs. 9/- per square foot of the area shown on the plans as built-up on the upper floors.

Z. A. HASHMI, K.B.
SECRETARY,
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