

CANTONMENT BOARD KORANGI CREEK

BYE-LAWS

For

NATIONAL INDUSTRIAL PARKS

Karachi

4th February, 2008

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CHAPTER 1

PREAMBLE

An Industrial Park by the name of Korangi Creek Industrial Park (“KCIP”) is being developed by National Industrial Parks Development and Management Company (“NIP”) on 240 acres of land located at Sector 38, ST-1, Korangi Industrial Area, Korangi, Karachi.

These Building Regulations regulate the establishment and operation of Industrial Units by Licensees and Sub-Lessees.

These regulations known as Cantonment Board Korangi Creek Building Bye-Laws are hereby provisionally approved. Final approval will be made after the Notification of the Govt. of Pakistan.

These Building Regulations shall be applicable within areas acquired or to be developed by NIP in the Industrial Park. The design and construction of Building(s) in the Industrial Park shall be in conformity with these Building Regulations.

Only Cantonment Board Korangi Creek shall have power to make amendments, alterations, or additions in these Building Regulations or to relax any of its provisions.

GENERAL STANDARDS: INDUSTRIAL DEVELOPMENT

Scope

For the purpose of these Regulations, the terms 'industrial uses' 'industrial purposes', industrial activities' and 'industrial development' include:

- the making or manufacturing of any articles or part of any article;
- the altering, fabricating, ornamenting, finishing, compounding, assembling, blending, mixing, packing or canning, adapting for sale, or breaking up or demolition of any article;
- the extraction, dressing, treatment or preparation for sale of minerals, or the extraction or preparation for sale of oil;
- any other activity which has been designated as “industry” by the Federal Government or Government of Sindh through a notification.
- For the purposes of these Regulations, industries are classified as "residential manufacturing" and "non-residential manufacturing"

Permits for Industrial Development

- No land development for industrial purposes may be undertaken without a Special Development Permit from MP&ECD, except in the case of residential manufacturing for which a General Development Permit may be obtained from the concerned Authority upon compliance with the requirements of an applicable detailed plan, any area standards and any other pertinent requirements or regulations.
- The concerned Authority determining an application for a development permit for industrial purposes may grant the permit with consultation of MP&ECD only if it is satisfied that the applicant has complied, or will comply, with: the following standards:
 - Any applicable bulk, height, area or other standards already specified
 - The requirements of any applicable detailed plan or planning position

- Any applicable requirements of other laws, regulations or bye-laws for licensing or regulating industrial uses or operations for the protections of the environment, or of health and welfare of residents of the area

Criteria for Special Development Permit for Industrial Purposes

In determining an application for a special development permit for industrial purposes, the following performance standard shall be appropriate:

Removal of Wastes

The applicant shall submit plans for the removal of liquid and solid wastes from the site in such manner as shall avoid or minimize the pollution of nearby water courses or sources, sewers, or water supply facilities, or damage to sewer lines or sewerage treatment plants; and the developer and operator shall comply with such conditions as may be imposed in respect of the disposal of industrial waste.

Removal of Noise and Vibration:

The applicant shall give the details of noise and vibration generation in the industry and or its control, and shall avoid or minimize the noise and vibration generation; and the owner and operator shall comply with the conditions set down.

Access and Loading:

Facilities for vehicular access and unloading shall be adequate for the particular industrial activities and be so designed and located as to ensure safety and eliminate fire hazards.

Considerations must be given to the following:

- The precise nature of the industrial process in relation to the impact on the environment, especially, though not exclusively in reference to the emission of fumes and dust and creation of noise.
- The potential burden on utilities i.e. water, sewerage, electricity, gas, telephone etc
- The particular needs of the industry, such as the need to be near water, docks or a source of raw materials.

USE AND OCCUPANCY CLASSIFICATION

Factory industrial group (F)

This group includes among others the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not hazardous.

Moderate-Hazard Occupancy (F-1)

The moderate hazard industries shall include but not be limited to, the following: aircraft, appliances, athletic equipment, automobiles and other motor vehicles, bakeries, beverages, boats.....etc

Low Hazard Occupancy (F-2)

Factory industrial uses that involve the fabrication or manufacturing of non- combustible material which during finishing, packing or processing does not involve a significant fire hazard. This should include but not be limited to, the following:

Beverages, brick and masonry, ceramic products, foundries, glass products, gypsum, ice, metal products (fabrication and assembly)

High Hazard Group (H)

This group includes among others the use of a building or a portion thereof, that involves the manufacturing, processing, generation or storage of material that constitute a physical or health hazard

High- Hazard Group (H-2)

Buildings and structures which contain materials that present a deflagration hazard or a hazard from accelerated burning shall be classified as group H-2

CHAPTER 2

DEFINITIONS

CLAUSE – 2:

1. In these Bylaws, unless the context otherwise requires, the following expressions shall have meaning, hereby respectively assigned to them that are:-
 - a. “CBKC” means Cantonment Board Korangi Creek.
 - b. “NIP” means National Industrial Parks Development and Management Company;
 - c. “PIDC” means Pakistan Industrial Development Corporation (Pvt.) Ltd;
 - d. “KCIP” means Korangi Creek Industrial Park located at Sector 38, ST-1, Korangi Industrial Area, Korangi, Karachi;
 - e. “Board of Directors” (BOD) means the Board of Directors of NIP;
 - f. “CEO” means the Chief Executive Officer of NIP;
 - g. “COO” means the Chief Operating Officer of NIP;
 - h. “Estate Management Committee” (EMC) means the Committee consisting of the CEO, COO and the Representative of allottees at the Industrial Park who will be nominated by the BOD;
 - i. “Back space” shall indicate the clearance open to the sky between building and boundary line at the back of plot;
 - j. “Building line” means the exterior line of profile of building on the ground or that can be projected on the ground as prescribed in master plan;
 - k. “Building plan” means set of drawings that describe various details of the structure to be completed on the plot.
 - l. “Building” means any built structure or enclosure permanently affixed to the land.
 - m. “Allottee / Licensee / Sub-Lessee” means any persons(s), corporate or co-operative body or any other legal entity who/which is allotted plot(s) in the Industrial Park on sub-lease for a specified number of years for establishing an industrial enterprise and on transfer of ownership/title, such plot stands transferred in his/its name;
 - n. “Engineer” means a professional with an Engineering Degree from any University or Institution recognized by Pakistan Engineering Council;
 - o. “Common Water Supply” means water supplied from the water distribution network provided for use of the consumers.

- p. “Completion Certificate” means certificate issued by the Cantonment Board Korangi Creek.
- q. “Industrial Parks Manager” means an officer, who is appointed by NIP.
- r. “Front Space” shall indicate the clearance open to the sky, between building and boundary line on the road side of plot;
- s. “Government” means Government of Pakistan;
- t. “Height of building”, the height of a building shall be calculated from the plinth or floor level;
- u. ‘Master plan” means the development plan of the Industrial Park which describes various land uses providing short and long term policy guidelines for controlled growth in the future.
- v. “Occupier” means the person who legally occupies the building, could be other than the owner of the building.
- w. “Ordinance” means the Companies Ordinance, 1984 and every statutory modification thereof for the time being in force;
- x. "Plot" means a single parcel of land located within a sector/block and demarcated as such.
- y. “Premises” means a building designed for use as a factory or workshop and includes any office on the same site.
- z. “Sewerage system” means network of underground sewers and or surface drains provided for the purposes of collection and conveyance of waste water / sewerage.
- aa. “Side space” means clearance open to the sky between the nearest building line and the boundary line;
- bb. “Site plan” means map of any specific plot prepared by a professional engineer/architect registered with the Cantonment Board Korangi Creek and drawn in scale equal to that used in Master Plan and indicating its position with respect to adjacent plots and roads;
- cc. “Site” means the piece of land under the plot.
- dd. “The Industrial Park” means KCIP as will be established by NIP;
- ee. “Unit” means an element or component of a thing or building block;
- ff. “Worker(s)” means person(s) employed for the purposes of the operation / running of the factory/industry.

- gg. “Written” means “in writing” includes printing, lithography, type- writing, telex, tele-facsimile (fax) and other modes of representing or reproducing words in a visible form.
- hh. “Factory” “means a building or part thereof used for manufacture, production or preparation of any article.
- ii. "Registered Architect/Engineer" means a person qualified as such and enrolled on the list of approved Architects/Engineers of the CBKC, and registered with the PCATP/PEC.
- jj. Words imparting feminine gender shall include the masculine gender as well;
- kk. Words imparting masculine gender shall include the feminine gender; as well
- ll. Words imparting persons include bodies corporate and otherwise, firms, registered or un-registered associations, and non-government, semi-government and government organizations;
- mm. Words imparting plural shall include the singular number;
- nn. Words imparting singular shall include the plural number;
- oo. Words of expressions in these Building Regulations shall, except where it is repugnant to the subject or context, bear the same meanings as in a standard English dictionary;
- pp. “Industrial Park Engineer” means an engineer appointed as such by NIP
- qq. “Acre”, means a size of land equal to 4840 square yards
- rr. “Scrutiny Fee/Services Charges”, means a fee to be determined and levied by the CBKC for services rendered;
- ss. “Owner”, An individual or organization who has been allotted through balloting or by way of purchase
- tt. “Environmental Guidelines”, means the guidelines on environmental standards provided by NIP to be complied with by all allot tees/owners;
- uu. “Sanctioned Plan”, means the set of plans and specifications submitted under these bylaws and duly approved by CBKC;
- vv. “Bath Room” means a room containing a water tap/wash basin and a shower or a bathtub or a bath tray, and with or without a W.C.

- ww. “COS-Compulsory Open Space” means that part of a plot which is to be left completely open to sky, over which no structure or any integral part of the building shall be permitted except permissible projections, basement, steps, septic under ground tanks, soak pits, water reservoirs and lines for sewage, water, electricity, gas, telephone etc., or those structures required by civic agencies such as electric sub-station permitted elsewhere in these Regulations.
- xx. “Corner Plot” means a plot situated at the intersection of two or more streets/roads.
- yy. “Depth” in respect to a building means the measured distance perpendicular from the outermost part of such building at its rear excluding projections as permitted in these regulations.
- zz. “Floor Area Ratio” means the total floor area of a building divided by the area of the plot.
- aaa. “Footprint” means the portion of a plot of land covered, at any level, by a building of part thereof other than basement.
- bbb. “Ground Floor” means the floor of any structure built just above the plinth level.
- ccc. “Loft” means a horizontal slab used only for storage purposes, which shall be allowed in kitchens, baths and store rooms/shops with access from inside only upto 5’-0” clear height between the loft floor and roof height and shall not exceed 30% of the floor area of the room.
- ddd. “Obnoxious Industries” include, amongst others, brick kilns, coke ovens, salt glazing, sulphur working, making of cellulose lacquer, pitch bitumen, charcoal burning, gut scraping, tannery, glue making, fish meal, soap boiling, tallow making, skin dyeing and those which may be specified as Obnoxious Industries by the Industries Department from time to time.
- eee. “Pergola” means a horizontal structure of grid or trellis, the voids of which must be at least 75 percent of the total area in the plan of the pergola and are open to sky.

- fff. “Plinth” means the height of the finished floor level of the ground floor, measured from the top of the finished surface of the road serving the plot, taken from the centre of the property line of the plot along the road. In case of more than one road serving the plot, the plinth will be measured from the road providing principal access at the higher level. The height of the plinth shall be limited to 4”-6”, except on plots where the natural contours are more than 4”-6” over at least 40% of the plot area as measured from the point at the centre of the property line of the road adjacent to it.
- ggg. “Sun-Shade” means an outside projection from a building to provide protection from weather, which cannot be converted to habitable space.
- hhh. “Toilet” means a space for personal ablution which includes at least one urinal and/or W.C. (water closet).

CHAPTER 3

PROCEDURE FOR OBTAINING APPROVAL FOR CONSTRUCTION OF BUILDING

CLAUSE – 3:

1. A Licensee / Sub-Lessee intending to erect or re-erect any building or factory shall apply in writing to CBKC through NIP on Form 'A', annexed to these Building Regulations which shall be supported by following documents:
 - i. A site plan of the plot on which building is sought to be erected, prepared and signed by a registered Architect / Engineer of CBKC;
 - ii. A set of building drawings proposed for construction, prepared and signed by the Owner, Architect, and the Engineer. The drawings should show plans, sections and elevations together with other necessary details pertaining to RCC elements, joinery works and covered area of every floor. 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.
 - iii. Set of working drawings and detail drawings by a structural engineer.
 - iv. A set of working drawings for plumbing and electrical work duly signed by concerned professionals.
 - v. Specifications of building as prescribed in Form 'B';
 - vi. Complete design and drawings of HVAC if any.
 - vii. A set of soil investigation report.
 - viii. A comprehensive chart showing covered area statement approved justifying FAR
2. All applications, plans, and specifications shall be in triplicate and signed by buyer and/or lessee, as the case may be.
3. The applications, plans and specifications shall be in English.
4. Every prospective builder intending to carry out Building Works whether new or involving additions and alterations shall employ a Registered Architect/Engineer to design and supervise the Building Works after approval from CBKC.
5. **Employment of Registered Practitioners.** Where the Registered Architect so employed ceases to be in charge of such Building Works before the same is completed, further execution of such works shall forthwith be suspended until a fresh appointment is made as required under Regulation 4 (i). A certificate duly signed by the Registered 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.

6. A practicing architect shall get himself registered on the panel and secure a certificate from the EMC of NIP after paying prescribed fee.

SITE PLAN

7. The site plan must be drawn to a scale of not less than 1" =32' showing:
 - i. The direction of north point;
 - ii. The boundaries of the site with site dimensions.
 - iii. The position of site in relation to adjacent roads and the level of the site in relation to roads on which it is situated;
 - iv. All buildings and premises within 150 feet (45m) of the boundaries of the site;
 - v. The existing condition of the site whether occupied by a building or not; depressions and other salient features, if any;
 - vi. The open space to be left inside or about the building to be erected.
 - vii. Proposed landscape and finishes of pavements with levels.
 - viii. Overall drainage pattern of the total plot and slope directions
 - ix. Incorporating entry and exit points as shown/ suggested in overall master plan.

BUILDING PLAN

8. The Building Plan must be drawn to a scale of not less than 1:96 showing:
 - i. The plan of ground floor and all other additional floor(s);
 - ii. The position and dimensions of all projections beyond the main walls of the building;
 - iii. The positions, form, and dimensions of proposed sewerage and drainage arrangement;
 - iv. The level and width of foundations and level of lowest floor with reference to level of center of the road on which front of the proposed building abuts,
 - v. The level of the courtyard and open space in the plot;
 - vi. The elevation and detail of all sections of building;
 - vii. The size of doors, windows, ventilators and openings for each room and covered area on each storey;
 - viii. The assigned space for name of firm and advertisement in the front elevation drawing.

- ix. Boundary wall elevations, sections plans and entry gate/ door and finishes.

9. Graphic Requirements

- i. Drawings shall be prepared on 24"x36" or bigger size drawing sheets.
- ii. Scales
 - a. Scales permitted for plans 1"=16'
 - b. This scale is minimum, larger scales may be used to show the details of the construction.
 - c. Deviation from the specified scale can only be permitted with special approval from CBKC.
- iii. The seal date and original signature of the Registered Architect/Engineer responsible for the drawings is required on each sheet.
- iv. Show all street and road alignments on drawings.

10. Submission of Plans

- i. The building plan shall be prepared in AutoCAD and submitted to CBKC through NIP in quadruplicate including one copy of tracing paper (on 24"x36" drawing sheets) which shall accord approval and return one copy to the owner. The owner will pay approval fee to CBKC levied by CBKC.
 - ii. A soft copy of the drawings shall be submitted to National Industrial Park Engineer in the form of a Compact Disc (CD-R). The CD must be labeled for identification showing the applicant's name and application number.
11. Specifications in Form 'B' shall be supplied along with application for approval of a building plan. Where question of structural stability is of vital importance, the Buyer and/or lessee may be required to submit, in addition to the plans and specifications stated above, the full structural calculations, specifications, and methods of construction to be used for structural elements.

12. Seismic Considerations

The structure of the building should be in compliance with the relevant earthquake zone. The drawing should clearly mention the relevant seismic zone. All structural calculations should also reflect the seismic considerations.

MINOR ALTERATION IN PLAN

All alteration / amendments will be approved by C.B.K.C.

REGISTRATION OF APPLICATION

13. An Application presented under Clause-3(1) supra shall be registered, if accompanied by the documents mentioned therein, and disposed of as early as possible, but not later than thirty days from the date of the registration of an application, and if no order is passed on any such application within sixty days of its registration, it shall be deemed to have been sanctioned to the extent to which it does not contravene provisions of these Building Regulations or master plan.
14. If on scrutiny, Application is rejected, buyer and/or lessee shall be informed in writing of the grounds of rejection, within a period of sixty days. The Licensee and/or Sub-Lessee shall then remove the causes of rejection and re-submit the Application with the amended plans or specifications as the case may be, to the CBKC.
15. The National Industrial Park Manager or any other official deputed by EMC or NIP shall from time to time, visit construction site for inspection. Building Regulations violation will be inspected by the CBKC. A notice of any violation observed will be served to the buyer by CBKC on which action will be taken by buyer within thirty days. If the fault is not rectified, CBKC has the right to demolish the unlawful portion of the building at the cost of the Licensee / Sub-Lessee. The approved set of drawings should be available at the construction site at all times for immediate reference.

REPAIRS

16. No application is required for the following repairs or erections, etc. subject to the condition that they do not infringe any of these Building Regulations:-
 - i. Repairs in the form of replacement of existing materials by a similar material if no demotion is involved and the building remains throughout the operation substantially the same as it was;
 - ii. The erection of sun-shades not abutting or over-hanging any street or the property of any other person; and
 - iii. The opening, closing, or replacement of internal windows or doors

FEES AND PENALTIES

Only CBKC will be authorized to levy all kinds of fees / penalties for any alteration / violation of Building Bye-Laws.

CHAPTER 4

BUILDING REQUIREMENTS

CLAUSE – 4:

1. Residential use of plots or part thereof, or the building raised thereon shall not be allowed inside the industrial block except for watchmen.
2. **Area covered by building shall not exceed 65% of the total plot area in any case.**

3. COMPULSORY OPEN SPACE

(Set Back) – FRONT

A minimum clear distance between front boundary and building line should be left as follows:

For a plot size up to 1 acre – set back will be of 20 feet

Plot size of 1 acre and above – set back will be of 25 feet

- In case of some local restrictions due to configuration of the plot, special permission will be sought from the EMC/NIP for reduction in front space.

4. (Set Back) – BOTH SIDES

A minimum clear distance between both side boundaries and building line should be left as follows:

For a plot size up to 1 acre – compulsory open space will be 10 feet

Above 1 acre – compulsory open space will be 15 feet

However, if the numbers of stories are two, the side space shall not be less than 15 feet and if the numbers of stories are greater than two, then the clear distance shall not be less than 20 ft.

5. (Set Back) - Rear Side

A minimum clear distance between rear boundary wall and building line should be left as follows:

Up to 1 acre = compulsory open space is 10 feet

Above 1 acre = compulsory open space is 15 feet

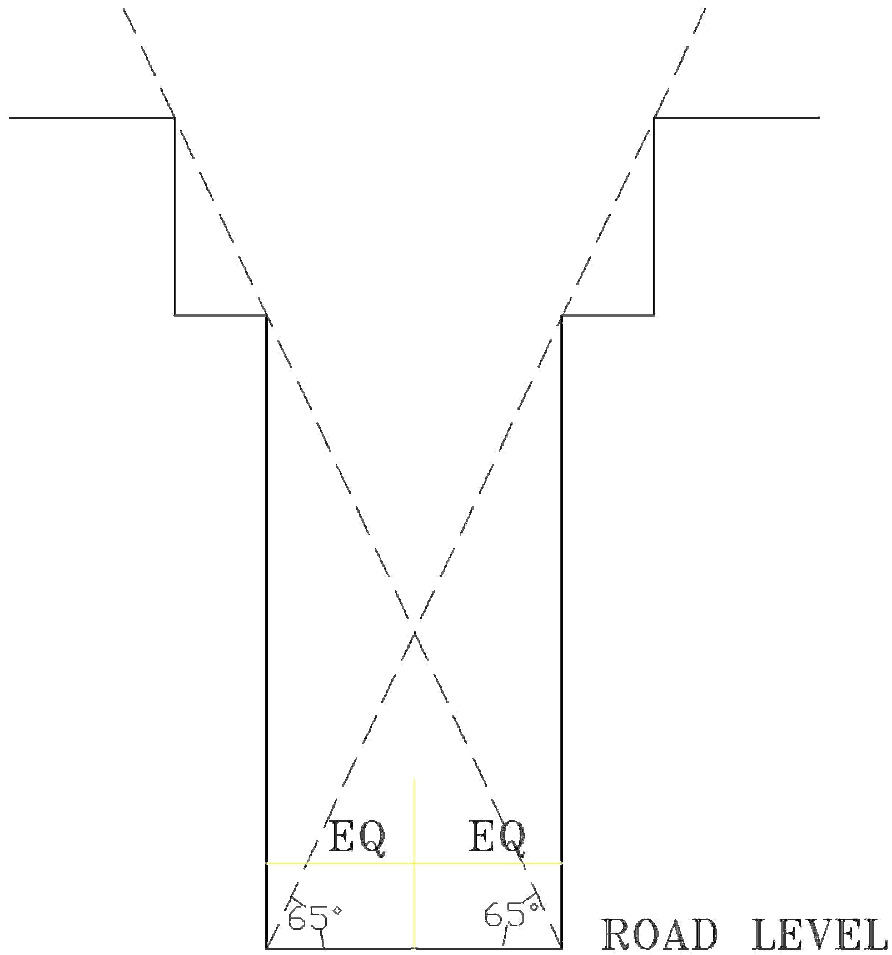
However, if the numbers of stories are two, the back space shall not be less than 15 feet and if the numbers of stories are greater than two, then the clear distance shall not be less than 20 ft.

1. car parking
2. loading bays

| s.no | Area of Plot Sq yards | Allowable Covered area | No.of storey | Right side | Left side | Front side | Rear side | remarks |
|------|-----------------------|------------------------|--------------|------------|-----------|------------|-----------|---------------------------------|
| 1 | 250 & below | 100% | GF+4 | - | - | - | - | Full basement allowed |
| 2 | 251 to 650 | 75% | GF+4 | 5'0" | 5'0" | - | 5-0" | 100% basement Of allowable area |
| 3 | Exceeding 650 | 65% | GF+4 | 5'0" | 5'0" | 15'0" | 10'0" | Must be constructed for parking |

Height Related Setbacks of Buildings

The height of buildings will be such that it would not intersect an imaginary line from the opposite side of the main road serving the building at an angle of 65 degrees with the horizontal. (Not applicable on chimney shaft of industrial buildings and communication equipments)



Example of Height and Setback

Height of Building

5. A minimum clear height of room under any structure member shall be provided as under except in case of central air conditioning.

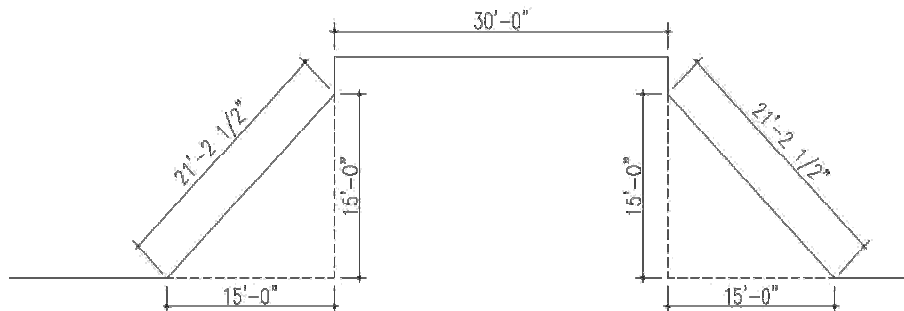
- | | |
|-----------------------------------|-------|
| a. Kitchen | 8 ft |
| b. Bathroom | 8 ft. |
| c. Garage and car porch | 8 ft. |
| d. Passages, galleries, corridors | 8 ft. |
| e. Head room under stair landing | 7 ft |
| f. Assembly area | 15 ft |

6. Maximum clear height is permitted for specific industrial use and purpose only. No loft spaces can be added later.

Chamfering of Corner Plots/ Splay

The corners of all plots abutting on two intersecting roads for auto vehicles shall be chamfered as follows:

- From 30 feet to 59 feet width of road, the distance should be 6 feet
- From 80 feet to 109 feet width of the road, the distance should be 9 feet.
- From 110 feet above width of the road, the distance should be 15 feet. In case building abuts on service road the chamfered will be governed on the width of the service road.



Design and Elevation

7. The design and elevation of building shall conform to the type of design and elevation, approved by CBKC. The materials used in construction, its texture, color, finishing and shall be chosen from the approved themes provided by NIP. Such approval shall be obtained thirty (30) days prior to the initiation of construction.
8. Buildings with common walls at the boundary line shall be designed simultaneously in order to secure floor levels, building height, windows, and sun-shades as well as texture, color, and finishing of front space.

Miscellaneous

9. Every Licensee and /or Sub-Lessee who undertakes construction of building(s) shall be responsible for the material used therein. The responsibility for the structural stability of a building rests with buyer and/or lessee.
10. A Licensee and /or Sub-Lessee shall undertake calculation and construction of each floor of the building in a manner to ensure sufficient strength and safety with respect to the loads, expected to come on them.
11. Extra precautionary measures shall be taken in the building(s) wherein heavy machinery or machines producing vibrations, are required to be installed.
12. Every building with less than 500 workers shall have at least two emergency exits per floor possibly at ends.
13. Every building with more than 500 workers shall have at least three emergency exits per floor.
14. The material and method of construction intended to be used in construction shall be such as approved by the NIP or its authorized Engineer. Such approval shall be obtained from the NIP prior to initiation of construction.
15. No combustible material other than allowed by NIP shall be allowed for construction work.
16. The steel used in construction, shall conform to the latest editions of Pakistan Standards, British Standards, American Concrete Institute Standards, American Society for Testing and Materials Standards and other standards as may be specified by the Engineer for Special Material.

17. Where R.C.C. is used, the material shall conform to standard specifications applicable to the type of concrete and shall conform to the latest editions of Pakistan, British, ASTM, and ACI Standards

Chapter 5

Foundation

18. The foundation of building(s) shall be designed on the basis of prevailing strata, by an engineer registered with CBKC. The engineer shall certify about the soundness of foundation.
19. The site or any part thereof on which building(s) is proposed to be raised and workers shall have to work will be raised not more than one foot from the ramp level entering the plot. No Building shall be constructed below the specified level of the site.
20. The surface of the plinth shall not be less than 01 feet above the highest finished level of adjoining road. There shall be sufficient slope from the interior outwards to ensure proper drainage unless other adequate means of drainage have been provided.
21. Building(s) must be provided with a damp proof course at plinth/floor level of a type approved by the NIP/its engineer.
22. The floor of building(s) shall be constructed in accordance with the expert advice to be obtained by buyer and/or lessee for protection against impact, abrasives, chemicals, termite, fire etc. The buyer and/or lessee shall communicate the written expert's advice to National Industrial Park Manager.

Walls

- 23. All load bearing walls shall be designed according to applicable buildings code(s) with regard to their load bearing capacity. The walls shall be constructed of non combustible material only, as approved by NIP/its engineer.**
24. All partitions and panel walls shall be of such thickness as to ensure against the breakage due to vibration produced by machines installed near these walls.
25. All the walls separating the fire proofing area of the building from rest of building shall be properly sealed and appropriate fire proofing shall be done
26. The number and width of doors shall be sufficient to facilitate movement of machinery, and the escape of workers in case of fire.
27. There shall be proper and prominent fire escape routes for the workers.
28. The finishing of outside faces of walls and columns shall comply with the approved plans and elevations.
29. No entrance other than provided gates for each plate shall be allowed for the movement of material or human across the wall.

Stairs

30. The stairs shall be wide enough to facilitate necessary and proper movement of workers and machines. Building(s) which are more than 3 storey high shall have lifts in addition to stairs for the said purpose. The stairs and lifts shall be properly illuminated and ventilated and shall be fire-rated. Fire stair to have a minimum width of 4 feet, minimum tread of 12 inches, and minimum risers of 6 inches. The treads shall be of anti - slip finish and supported by continuous hand rail. The headroom clearance measured vertically above any landing or the nosing of any stair tread shall be at least 7-0 ft. All staircases which are enclosed shall be provided with adequate lighting and ventilation from openings not less than 7.5% of the staircase area.
- The riser of all stairs in the buildings shall not be more than 6 inches (15cm) and the tread shall not be less than 10 inches (25cm). Staircase risers and treads will be worked out through the following formula: $2R + T = 24$ where R is riser and T is tread and the minimum R is 6 inches
 - The minimum width of staircase shall be 4 ft (1.2m). the distance from any point to the nearest staircase shall not exceed 100ft(30m)
 - A handrail shall be provided on each side of the staircase when the staircase is 6 ft (1.8m) wide or more
 - There shall not be more than 15 risers between each landing in a straight flight. Depth of the landing shall not be less than the width of the flight

Lifts

No lift will be of a capacity less than 6 persons, and lifts shall conform to the technical provisions of BS5655 with respect to all safety devices, procedures of examination and annual testing / certificate of lifts by a professional engineer of concerned disciplines.

The Following recommendation will be consider in the design of lifts.

Minimum provision of lifts

| Minimum Climbing Height | Minimum Numbers of Lifts | Capacity |
|---------------------------------------|--------------------------|-----------------------|
| From 46 ft (14m) to Below 59 ft (18m) | 1 | 450kg (6 Passenger) |
| 59ft (18m) and above | 2 | 450 kg (6 Passengers) |

Additional numbers of lifts to be provided by the professional designer keeping in view the size speed and size of brand of lift, type and height of buildings etc.

Minimum provision for ONE cargo lift is a must if building is two (2) storey in height or higher.

Application of Parking Requirements

Minimum one motor vehicle parking space shall be provided for

- The provision of off- street parking space facilities for terminals for public service vehicles, including buses, taxis, trucks and pick ups.
- The provision within transportation rights of way of parking strips, or taxi, carriage or bus stands or loading and unloading spaces for supply vehicles
- One car space for every 250-sft. (32-sqm) of floor area of the administrative block of the building for the staff.
- One car space for every 2000-sft (182-sqm) of floor area for the workers.
- One motor cycle / scooter for every 500-sft (46-sqm) of floor area.

Standard for Parking Spaces

| DESCRIPTION | FOR CAR | FOR MOTORCYCLE |
|---------------------------------|---------------|----------------|
| Bay width | 8 ft (2.43m) | 2.5ft (0.75m) |
| Bay length | 16ft (4.86m) | 6ft (1.8m) |
| Gradient of ramp | 1:7.5 | 1:8.5 |
| Straight turning radius (outer) | 24 ft (7.3m) | |
| Helical length turning radius | 32 ft (9.7m) | |
| Lot turning radius | 17.5ft (5.3m) | |
| Minimum ramp and driveway width | | |
| Two way traffic | 20 ft (6.0m) | |
| One way traffic | 12 ft (3.66) | |

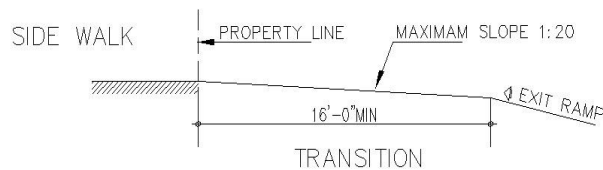
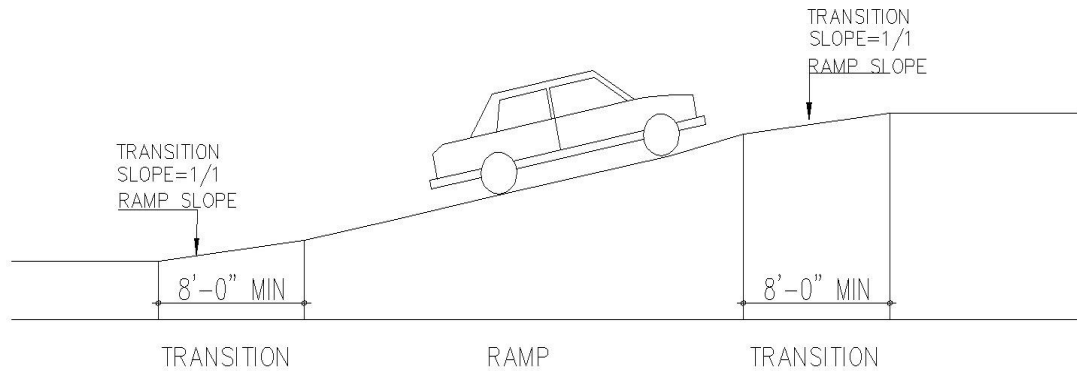
| Angle of parking (degrees) | Stall width Ft | Stall Length Ft | Kerb length Per car Ft | Stall depth Ft | Min one way Driveway Width Ft | Lot width1 Row +1 Driveway Ft | Lot width 2 Rows +1 Driveway Ft |
|----------------------------|----------------|-----------------|------------------------|----------------|-------------------------------|-------------------------------|---------------------------------|
| 0= along Kerb | 8(2.4m) | 19(5.8m) | 19(5.8m) | 8(2.4m) | 12 (3.66) | 19.5(6.0m) | 27.5(8.4m) |
| 30 | 8(2.4m) | 16(4.9m) | 18(5.5m) | 15(4.6m) | 12(3.7m) | 27(8.2m) | 42(12.8m) |
| 45 | 8(2.4m) | 16(4.9m) | 17(5.2m) | 17(5.2m) | 12(3.7m) | 29(8.8m) | 46(14.0m) |
| 60 | 8(2.4m) | 16(4.9m) | 15(4.6m) | 18(5.5m) | 21(6.4m) | 39(11.9m) | 57(17.4m) |
| 90 | 8(2.4m) | 16(4.9m) | 8(2.4m) | 16(4.9m) | 25(7.6m) | 41(12.5m) | 57(17.4m) |

General Conditions for parking

- The parking space, including ramps, shall not be included in FAR.
- Total parking space requirement of every building shall be determined as a sum of parking requirement for each type of use to which the building is subjected.
- Minimum clear height of parking structure without obstruction shall be 7'-6". (2.28m).
- Detailed plan clearly showing entry, exit, gradient of ramp, turning radius, storage spaces, circulation and movement of vehicles etc. shall be submitted.
- 16% of the total car parking space will be utilized to provide space for Motorcycle parking @ 6 Motorcycles and 8 bicycles for every one car.
- Minimum one out of every 50 car parking stalls shall be dedicated for the disabled person's at most convenient location possibly near entrance. The entrance should have a barrier free access for the handicap.
- When units of measurement used in computing the number of parking spaces result in the requirement of a fractional space, the nearest whole number to next higher side of parking spaces shall be taken. For industrial units on plots over 3500sq.yds loading and unloading facilities shall be provided within the area of the plot, in keeping with the functioning of the industrial unit.
- For industrial units on plots over 3500sq.yds loading and unloading facilities shall be provided within the area of the plot/ site or, in keeping with the functioning of the industrial unit. Parking for loading trucks and Lorries shall be within the site.

Ramps

A ramped driveway exit rising up to a public sidewalk must have a transition section that is almost level (maximum slope 1:20) before intersecting the sidewalk to prevent the hood of the car from obscuring the driver's view of pedestrians on the walk. This transition should be 16' (4.9m) long. Property line walls should also be regulated so as not to interfere with the driver's view of pedestrians on a public sidewalk. Wherever an exit driveway is parallel and adjacent to property line wall which extends all the way to a sidewalk, the edge of the driveway should be physically established, by curb or railing, at least 6 feet(1.87 m)from that wall. For each foot that the wall is held back from the sidewalk, the required distance between driveway and wall may be reduced by one foot (30 cm).



MISCELLANEOUS

31. No construction is allowed in the areas which are left open to sky as mentioned in referred clauses except time and sale offices
32. The size of the time office and gate office should not exceed 10'x12' and 10'x8' respectively.
33. The construction of mosque within the factory area is allowed but not in the compulsory vacant strips. The building plan shall indicate the place of mosque in the building.
34. The Area of kitchen should not be less than 100 square feet.
35. The Stockpiling of all the construction material shall be made within the boundary line of the respective plot.

36. No material shall be dumped on the front road or adjoining plot during the construction of building.

No material shall be dumped on the front road or adjoining plot during the construction of building. All rubble, rubbish and other debris shall be removed from any work or construction site promptly so as to safeguard the health, safety and welfare of the public.

All rubble / rubbish shall be hauled to a site that is either a licensed solid waste disposal facility or will otherwise ensure compliance of all NIP regulations and requirements regarding solid waste for the disposal of such materials.

37. Any damage of infrastructure works or utility lines caused during construction of industry shall be made good at the cost of the concerned allottee. In such a case the cost difference will be settled from the security deposit by NIP.

38. Adequate safety measures such as wearing of safety helmet, shoes, goggles and body harness shall be taken during the construction phase of each industry.

39. The structural stability of each kind of scaffolding shall be insured during the construction of building.

40. change in nomenclature/ type of industry is permissible upon clearance from the Concerned Authority

41. Only those industries will be permitted as are not considered hazardous or obnoxious as defined by the Insurance Association of Pakistan(1996) of hazardous category

Basement

42. Basement in the building(s), if any, shall be constructed with water-proof walls. The floor space of the basement shall not extend beyond the limits of ground floor plate in case basement is used for storage purposes. The basement should be properly ventilated at all times and will not house any kitchen or toilet facility. 100% basement is allowed if it is for car parking purposes.

Storage of Explosives

The Licensee and /or Sub-Lessee shall obtain permission from the Inspector of Explosive for storage of explosives in the building. Licensee/Sub-lessee will ensure proper handling of explosive. In case of any accident/damage caused to any property or person, the owner shall hold NIP harmless and indemnified. Permission for the storage of explosives will be at the sole discretion of NIP

CHAPTER 6

HEALTH, SANITATION, DRAINAGE & WATER SUPPLY

LIGHT AND VENTILATION

1. For light and ventilation, in every building, there shall be adequate window / vent area. The amount of these openings shall not be less than 1/10th of the floor area of the wall surface or 0.5 sq.m or 5 sq. ft. for each person required to work in such room, whichever is greater.
2. In all buildings, cross-ventilation shall be provided except in case of building(s), which requires being fully air-conditioned. In every factory ventilation should be designed in such a manner that it could minimize the impact of obnoxious gases and pollutant which may arise from routine processes.
3. Every room or place where employees will work shall be adequately ventilated so that no air stagnancy occurs.
4. Wherever there is possibility of such air stagnancy as mentioned above, an exhaust fan shall be provided.
5. All places in building(s), where any person shall work or attend from time to time, shall have sufficient light facilities so that persons working there will not have eye strains.
6. Light facilities, wherever provided, shall be so located so as not to affect directly, the eyes of workers.
7. Every building should have minimum illumination of 30 foot candles (300 LUX) in work area and 5 foot candles (50 LUX) in corridors utilized as emergency routes.
8. All bath rooms, lavatories, and water closets shall have ventilation, in or close to the ceiling, opening direct to the outer air. Area of bath room and water closet should not be less than 25 square feet and 20 square feet respectively.

WATER SUPPLY

Water Service Pipe

- Except as permitted in the following paragraph, underground water service piping and the building sewer line shall be not less than 7ft.(2.13m) apart horizontally and shall be separated by undisturbed or compacted earth.
- The water service pipe may be placed within 7ft.(2.13m) of sewerage line provided that the bottom of the water service pipe is at least 12 inch (300mm). above the top of the sewer line.

Minimum capacity of water storage tanks in buildings

Overhead tank = 1 day+ 25% reserved for fire fighting

Underground tank = 2 1/2 days out of the reserved capacity 25% shall be kept reserved for fire fighting purposes by making suitable arrangements.

Distribution of Water within the premises.

The design of water supply pipe work, underground and overhead tanks shall be in accordance with the following schedule:-

Per capita water requirements/demand for various occupancies.

| Type of occupancy | Consumption |
|-----------------------------|--------------------|
| | Per head/day |
| | In litre |
| Industrial | 45 – 135 |
| Storage including warehouse | 30 |
| Mercantile (commercial) | 90 |
| Other business buildings | 45 |
| Service station | 200 |
| Semi public business | 45 |

In case recycling plant or treatment of effluent/sewage are provided, all requirements for construction and maintenance as set by National Environmental Quality Standard (NEQS) shall be followed:

Treatment of Sewerage, Sanitation and Waste Management

- All medical waste shall be safely collected, transported and disposed off in accordance with the public health standards (as prescribed by Sindh Environmental Protection Agency) and up to satisfaction of the Authority.
- All industrialists will ensure pretreatment up to the limits prescribed by the NIP of their waste streams to protect sewers and the integrity of the CETP”.
- In all public sale projects the central waste disposal system shall be provided by the developer.
- The industrialist will ensure compliance of international standards and those prescribed by NIP for the solid waste/effluent management. Violation of these regulations will be liable to imposition of penalties.

Digester/Septic tank

- Where no public sewer is in existence, all sewage shall be disposed off after properly treating, through digester or septic tank, and effluent shall be discharged safely into a soak pit as a temporary measure till such time as a system is laid out.

Soil Pipes, Waste Pipes and Ventilating Pipes

- A trap shall be used to maintain the water seal and make system fool proof against closing and blockages.

All the joints shall be:-

- properly prepared by the use of rubber gasket or water sealant materials for jointing;
- adequately supported throughout its length without restraining thermal movements, any fitting which gives such support being securely attached to the building;
- so placed as to be reasonably accessible for maintenance and repair.

- Ventilating pipe shall be provided in all stacks carrying wastewater or sewage, in accordance with the plumbing code.
- Drain water pipe of appropriate dimension shall be provided as per approved standard.

SANITARY PROVISION

Latrine and Urinals

9. Every latrine or urinal should be so constructed and properly maintained that smell does not disturb the local and adjacent environment, nor should any of its seats be visible from the street when the outer door is opened.
10. The walls of every latrine or urinal shall be plastered with cement or covered with an impervious material to a height of at least four feet above the floor level.
11. Every latrine and urinal shall be provided with a drain, and such drain shall be constructed of glazed pipes or other impervious material and shall connect the floor of the latrine or urinal with the estate sewer.
12. Every factory shall be provided with the following number of urinals and latrines fitted with flush system.

| | | | |
|----|---|--|--|
| A. | LATRINES | | Number of Seats |
| | a. Where the number of persons employed does not exceeds 50 | | Five (05) |
| | b. Where the number of persons employed exceed 50 | | One(01) additional seats for every 5 persons or any less number |
| B. | URINALS | | |
| | a. Where the number of persons employed does not exceed 50 | | Three (03) |
| | b. Where the number of persons employed exceed 50 | | One(01) additional urinals for every 20 persons or any less number |

13. The urinals and latrines required to be provided under Clause-11 above shall be located in accessible place within the precincts of the factory and each latrine shall be separated from an adjoining latrine by a partition wall not less than six(06) feet in height.

14. If female workers are employed, separate latrines screened from those for males and marked in vernacular in conspicuous letters “For Females only” shall be provided in the same manner as described in Clause-11 above. Those for males shall be similarly marked “For Males only”. Plates showing figure of a man, or of a woman, shall also be exhibited at the entrance of a latrine for each sex.

The minimum requirements/sanitary provisions as prescribed hereunder shall be followed:

- In an office with 30(thirty) persons (calculated at a rate of one(1) person per 100Sq.ft.(9.29Sq.m)), there shall be minimum of three(3) W.C.’s, two(2) washbasins and one(1) urinals. For every additional 20 (twenty) persons there shall be one(1) W.C., one(1) wash-basin and one(1) urinal. One(1)
- In factory with 30(thirty) persons (calculated at a rate of one(1) person per 100Sq.ft.(9.29Sq.m)), there shall be minimum of three W.C.’s, two(2) wash-basins and one(1) urinals. For every additional 20(twenty) persons there shall be one(1) W.C., one(1) wash-basin and one(1) urinal. One(1) wash-basin or equivalent washing space per 25(twenty five) or less persons shall be provided for ablution purposes, and shall be divided proportionately amongst the genders.
- Two urinals may be replaced by W.C., while proportionately dividing the fixtures among the genders. All fixtures shall be divided proportionately amongst the genders.

Bathing and Washing Accommodation

15. In every factory, at least two (02) tap(s) for the use of twenty persons and an additional one (01) tap for every additional twenty persons or less shall be provided for the washing of workers.

Drainage and Sanitation

16. On every plot, there shall be paved surface drains for disposal of surplus water. These surface drains shall be regularly flushed at least once a day. No obnoxious sewerage or fumes shall be discharged into open atmosphere or surface drains. In every factory effective arrangement shall be made for the separate drainage of domestic and process wastewater within its premises.
17. In every factory, provision of drench showers and eye wash stations should be made at all the locations other than bathroom where there is possibility of hazardous chemicals usage usually near chemical store and process halls.

18. The plumbing system of the sewerage shall be connected with sewerage system of the Industrial Park or any other arrangement approved by Industrial Park Manager. Industrial wastes or effluents shall be treated to a level as approved by NIP and standards laid by the EPA, before disposal into sewerage system or any other arrangement provided thereof. Minimum treatment will be in the shape of an approved size/shape of a septic tank.
19. Manholes shall be provided in the underground sanitary lines at all bends and connections of different sizes of pipes. No manhole shall be left open.
20. The height of the vent pipes shall be not less than four (04) feet higher than the buildings with which the vent-pipes are attached.
21. For the disposal of industrial waste water/sewage, the Licensee and /or Sub-Lessee of the plot shall, with due approval of NIP, make arrangement for disposal into the sewerage/ drainage system of the Industrial Park. Provision of septic tank prior to discharge into the Industrial Park's sewerage is obligatory. The planning and design of septic tank will be subject to approval of NIP. The retention of industrial waste water / sewage will be for a minimum period of four (04) hours prior to its discharge to Industrial Park's system.
22. No water from roof(s) of building(s) shall be allowed to be drained into the neighboring plots(s)/building(s). Gutters and rain water pipes shall be provided for the drainage of water from roofs(s), wherever necessary.
23. Wherever a drain is passing beneath floor, it must be properly constructed with gas-tight cast iron pipes.

Manholes and Inspection Chambers

- At every change of alignment, gradient or diameter of a drain, there shall be a manhole or inspection chamber. Bends and junctions in the drains shall be grouped together in manholes as far as possible. The spacing of manholes in case of pipe having a diameter 6inch/8inch (150mm./200mm) shall be 50ft./110ft. (15.2m./35.5m) according to respective diameter, and in case of diameter more than 8inch (200mm) the distance shall be not more than 150ft.(45m).
- The chamber shall be so designed to make the cleaning and inspection conveniently.
- Proper benching shall be provided equal to half the diameter of pipe in semi-circular shape with proper slope in either direction so that no solid shall accumulate in the Manhole/Inspection Chamber.

- Rungs shall be provided at 16inch(400mm) center to center in all manholes over 4ft.(1.2m) in depth. The size of the manhole cover shall be such that there is a clear opening of at least 2ft.(60cm) in diameter for manholes exceeding 4ft.(1.2m) in depth.

Storm Water Drainage.

- The roofs of every building, and the floor or balconies abutting on a street or constructed over a street, shall be so constructed or framed as to permit effectual drainage of the rain water there from, by means of a
- the rain water is carried away from the building without causing dampness in any part of the walls, or foundations of the walls, or foundations of the building, or those of an adjacent building, provided the fall is not greater than 20ft.(6m). in case of spouts.
- A leader shall not discharge into or connect with any soil pipe or its ventilating pipe, or any waste pipe or its ventilating pipe, nor shall it discharge into a sewer.
- Rain water from leader spouts etc. shall not discharge onto a public street at a height greater than 12inch(300mm) from that street, or onto a neighboring property.

HEALTH AND SAFETY

24. There shall be provided for each person working in any room of a factory, a floor area of at least thirty six (36) square feet (3 sqm), exclusive of the area occupied by machinery and breathing space of at least:
 - i. 700 Cft (20 m³) where mechanical or electrical power is used;
 - ii. 500 Cft (15 m³) where no mechanical or electrical power is used;

For the purpose of calculating breathing space available under this Clause, no space above six (06) feet from the floor shall be taken into consideration.
25. All kinds of power connections shall be installed in the manner so as to avoid any injury or harm to any person.
26. No part of building structure like staircase, beams, balconies, or any other projections shall be placed in a manner likely to cause bodily injury to any of the workers or may cause inconvenience in free movement.

CHAPTER 7

PRECAUTIONS AGAINST FIRE

1. The whole of the arrangements for fire-fighting will have to be made by the NIP. NIP will also have to submit the fire-fighting plan to CBKC and brief the CBKC about the adequacy of fire-fighting arrangements.
2. No external wall and no covering of a roof shall consist of wood, cloth, canvas, leaves, mats, grass or any other inflammable or combustible material.
3. Every industrial building shall be provided with:
 - Latest fire fighting equipment conforming to the standards of local Building Code/Pakistan Standards.
 - Ample supply of water maintained at a pressure sufficient to reach all parts of the industrial building, together with necessary hose pipes and fire hydrants, the number and location of which shall be as per the approved plan.
 - Chemical/ dry fire extinguishers approved by Pakistan Standards / Local Building Code will be installed as follows;
 - i. Each floor shall be provided with at least two (02) chemical fire extinguishers.
 - ii. All such fire fighting extinguishers/apparatus shall be kept in good order and periodically examined and tested.
4. Every building having more than three stories shall be provided with at least two(02) sets of fire stairs, one of which shall be on the outside of the building so as to afford direct and unimpeded access to the ground level from every part of the building, in case of fire. The stairs shall be permanently fixed and made of non combustible material and shall be provided with suitable and sufficient hand rails.
5. All fire stairs to be connected to safe exit doors via a 2hr rated exit corridor at ground floor.
6. If a fire stair serves below ground floor, a 2 hr fire rated vestibule should be provided at all levels below ground floor. This vestibule should be pressurized separately.
7. Exit doors shall be on opposite sides of the building.
8. The maximum travel distance to an emergency exit shall not be more than 200 feet.
9. Exit doors shall swing in the direction of exit travel and lead directly to the outside.
10. Exit doors shall be well designated and have a width adequate for the number of persons it must accommodate.

11. Exit doors shall not be locked and shall not have locks that require special operation.
12. Emergency exit signs shall be visible from 100 ft and should be written in letters at least 7in high
13. Exit doors should have easy opening mechanism.
14. All floors of the building shall have fire and emergency evacuation plan and diagrams posted in local language in various locations around the building.
15. All exit routes shall be at least 45 in wide.
16. Two exit routes shall be on opposite side of the building.

Fire Resistance Systems

Stand Pipe System

All buildings which are ground plus three storeys or above or more than 43 ft (13m) high shall be provided with a set stand pipe/ pipes as given below

- a) Buildings from (4) up to 8 storeys in height shall be equipped with not less than 2 inch (5.1cm) diameter stand pipes
- b) Buildings over 8 storeys in height shall be equipped with not less than 4inch (10cm) diameter stand pipe

The number of stand pipes shall be such that all parts of every floor are at a maximum distance of 120ft (36.5m) from the stand pipe.

Preferably, stand pipes shall be located with outlets within stairway enclosures; but if these are not available the stand pipes shall be located in a common corridor.

Automatic Sprinkler System

Automatic sprinkler system shall be provided in the following:

- Each floor mercantile and industrial building which is more than one storey high and which exceeds 20,000Sq.ft (1858.73Sq.m) covered area.
- All buildings compartments used for manufacture, display or sale of combustible materials and products which are more than 7000Sq.ft(650.5Sq.m) in covered area
- In covered car parking areas in buildings of which upper storeys are designed for other uses when such parking area exceeds 5000Sq.ft (464.6Sq.m)

- All building areas used primarily for storage of goods, and material including areas clearly specified for storage of incombustible materials and goods, which are more than 1000Sq.ft (92,93Sq.m) in areas.
- No sprinkler provision should be made in the immediate vicinity of generators or any electrical equipment.

Sprinkler System Construction

The sprinkler system will be constructed in the following manner

- Automatic Sprinkler System shall be arranged to set off automatic fire alarm system simultaneously.
- Every Sprinkler System shall be provided with a readily accessible outside valve to control all sources of water supply, preferably at entrance of building
- Automatic Sprinkler System shall be fed by an overhead water tank reserved solely for this purpose. The tanks shall be capable of supplying 25% of the sprinkler heads for 20 minutes but the minimum capacity of any tank shall be 5000 gallons (18,925lit). There shall be a minimum head of 15Lbs/Sq.ft (1.02Kg/cm.sq) above the highest discharge point.
- Provide at least one fire extinguisher on each floor at stairway landing and in a corridor at each lift or group of lifts.

Installation of Fire Alarm System

The fire alarm system shall be installed in the following

- All industrial buildings exceeding two (2) storeys in height and with more than 4000Sq.ft (371.74Sq.m) covered area.
- All office buildings more than five (5) storeys in height and with occupancy area of more than 1, 00,000sq.ft (9293.68Sq.m) above the ground floor.
- All places of public assembly

Signal Stations

Signal station shall be provided as follows:

- At least one (1) station shall be located in each storey in an accessible location in the natural depth of exit-way or escape.

All stations shall be so located that no point on any floor or the building is more than 150ft.(45.69) distant from a station.

Minimum Period of Fire Resistance

| Types of Buildings | Minimum period of fire resistance in hours for elements of structure | |
|---------------------------------------|---|----------|
| | Ground or upper storey | Basement |
| Industrial Buildings | | |
| Upto 92ft. (28m) high | 2 | 2 |
| Over 92ft. (28m) high | 2 | 2 |
| Storage & Public Car Parks | | |
| Upto 92ft.(28m) high | 2 | 2 |
| Over 92ft.(28m) high | 2 | 2 |
| Office Buildings | | |
| Upto 92ft. (28m) high | 2 | 2 |
| Over 92ft. (28m) high | 2 | 2 |
| Mercantile Buildings | | |
| Upto 25ft. (7.5m) high | 0.5 | 1 |
| Upto 50ft. (15m) high | 1 | 1 |
| Upto 92ft.(28m) high | 1 | 2 |
| Over 92ft. (28m) high | 2 | 4 |
| Electrical room/ equipment | 2 | 3 |

External Walls

- Any external wall which is situated within a distance of 4ft.(1.2m) from the relevant boundary, or is a wall of a building which exceeds 50ft.(15.22m) in height, shall be constructed wholly of non-combustible material apart from any external cladding.
- Any steel beam or column, wherever forming part of, or carrying, an external wall constructed of non-combustible material shall also be constructed wholly of non-combustible material.
- Any part of a roof shall be deemed to be part of an external wall if it is pitched at an angle of Seventy (70) degrees or more to the horizontal and covers a habitable space within the buildings.
- The exterior walls shall have a fire rating of 1 hour

Separating Walls and Fire Walls

- Separating walls will have a fire rating of 2 hours and will form a complete vertical separation between two adjoining buildings and shall not have any openings except for the following:
- Passage of a pipe through a separating wall if the pipe is not a flue pipe and has a diameter not exceeding 1 inch (25mm) if it is made of combustible material, and 6 inch (150mm) if it is made of non-combustible material.
- An opening which is necessary as a means of escape from fire, if the opening is fitted with a fire door which has fire resistance not less than the period required for the separating wall.
- Fire walls will have a fire rating of 2 hours.
- Any separating wall or fire wall which forms a junction with a roof shall be carried above the upper surface of the roof covering to a distance not less than 15 inch (375mm). A separating wall or fire wall shall not be required to comply with this requirement if:-

(i) Roofs being separated by the wall are of non-combustible construction;

(ii) Buildings separated by the wall do not exceed 40ft. (12.18m) in height.

Compartmentalization

Every floor of a building shall be divided as far as possible into compartments by means of appropriate fire resistant elements/measures for example fire walls as follows:

- Separating one occupancy from another within the same building.
- Separating part of a building from any other part of the same building which is used, or intended to be used, for a different function such as residential, institutional, assembly, storage, commercial use etc.
- Dividing an institutional building, except industrial building, into smaller compartments of an area not exceeding 3000Sq.yds. (2500sq.m).
- Separating occupancy areas from common circulation areas.
- All fire separation walls to have 2 hour fire rating
- In case that common services run through separation walls adequate dampers should be provided at walls.

Construction of Fire Walls

- Fire walls shall be constructed in any manner or with any non-combustible material conforming to a minimum fire resistance of two (2) hours.

Openings in Fire Walls

- Openings in fire walls may be fitted with a single or double leaf door with a minimum fire resistance for the following periods:-
 - Door giving access to an apartment from a common area – 30 min
Any other case – 2 hours.
- Except in case of fire doors giving access to occupancy areas from common circulation areas, all fire doors must open in the direction of escape.

Direct Access for Ground Floor and Above

- Except for storeys below the first storey, direct access for fire fighting shall be provided from the outdoors to every storey having its floor level less than 82ft.(25m) above ground by at least one unobstructed window or access panel for each 50ft.(15m) of wall, in each wall required to face a street.

- An opening for access required in above clause shall be not less than 3.6ft.(1.1m) high by 2ft.(0.6m) wide, with a sill height of not more than 3ft.(0.9m) above the inside floor.
- Access panels above the first storey shall be readily open able from both inside and outside or the opening shall be glazed with plain glass.

Protected Shafts.

- Protected shafts shall be constructed only for stairs lift, cargo lifts, or any other purposes which enable persons, things or air to pass between different compartments.

There shall be no opening in shaft enclosures except the following:-

- an opening for a pipe;
- an opening fitted with a door which has fire resistance of 30 minutes or not less than half the period required in table whichever is more.

Any protected shaft containing a lift or lifts.

- shall be ventilated to external air by means of one or more permanent openings situated at the top of the shaft and having a total unobstructed area of not less than 1.5Sq.ft.(0.13Sq.m) for each lift;
- shall not contain any pipe conveying oil or gas or any ventilating duct;
- may have an opening in its protective structure for passage of cables for the lift into the machine room provided that if the opening is at the bottom of the shaft the opening should be as small as practicable.
- If a protected shaft serves as, or contains, a ventilating duct, the duct shall not be constructed of, or lined with, any material which increases the risk of spread of fire.
- If a protected shaft consists of a stairway, it shall not contain any pipe conveying oil or gas, or a ventilating duct.
- A shaft that does not extend to the roof of a building shall be enclosed with top construction of the same strength and fire resistance as that of the shaft enclosure. Such shafts shall be provided with non-combustible vents for the relief of smoke and gases in the event of fire, with an area not less than 10% of the shaft area.
- Cargo lifts shall be fire rated and will be used for emergency evacuation fire exit and shall be used by fire fighters and will have its own emergency backup.
- All shafts that extend to the roof of a building shall be ventilated by a window in the side of the shaft of not less than 75% of the area of the shaft. Such window shall not

be located within three 10ft.(3m) of an interior property line, and its sill level shall not be less than 2.5ft.(0.76m) above the finished roof level.

Fire Resistant Doors

- Any fire resistant door shall, if exposed to a test by fire and then fitted in its frame, satisfy the requirements as to freedom from collapse and resistance to passage of flame for not less than the relevant period required.
- The clearance between the leaf of the door and the frame or between two leaves shall be as small as practicable.
- If two separate doors (whether single or double leaf door) are installed on opposite sides of an opening, the required fire resistance may be achieved by the two doors together or by either of them separately.
- Wired glass, if used in fire resistant doors, shall be of a maximum area of 1Sq.ft (0.1sq.m) and shall not be less than 1/4th inch (6mm) thick.

Miscellaneous Provisions

- If any part of an opening in an external wall of building other than a private dwelling house is directly above an opening in an adjoining storey, either:-
- The bottom of the upper opening shall be not less than 3ft. (0.91m). above the top of the lower opening and not less than 1.5ft.(0.56m) above the upper surface of the floor separating the storeys; OR
- A horizontal projection of non-flammable material is constructed between the two openings to project 1.5ft. (0.46m) from the wall.

Steel and Metal Structures

- All steel and other metal structural members shall be protected with non-combustible materials to provide the required fire resistance of minimum 2 hours.
- .Concrete fire protection on steel columns shall be reinforced and enclosed by wire mesh, metal clips or spirally wound wire of not less than 12 gauge size with a pitch not more than 4 inch(10cm).

- Where the fire resistant covering on columns is subject to damage by moving vehicles or handling of merchandise, the fire proofing shall be enclosed up to a height of not less than 5ft. (1.5m) from the finished flooring with a suitable metal covering of adequate strength.

Air Conditioning Ducts

- All air-conditioning and ventilation ducts including supports shall be constructed entirely of non-flammable materials.
- No air-conditioning or ventilation duct shall pass through a fire wall or a separating wall.
- Where ducts pass through floors or walls other than fire walls or separating walls, the space around the duct shall be sealed with roped asbestos, mineral wool or other non-flammable material to prevent the passage of flames and smoke.

Fire Resistance Rating Requirements for Fire Barrier Assemblies between Fire Areas

| Occupancy Group | Fire Resistance Rating (hours) |
|------------------------------|--------------------------------|
| H-1, H-2 (High Hazard Group) | 4 |
| F-1 (Moderate Hazard) | 2 |
| F-2 (Low Hazard) | 2 |

Fire Door and Fire Shutter Fire Protection Ratings

| Type of assembly | Required assembly rating (hours) | Minimum fire door and fire shutter assembly rating (hours) |
|---|----------------------------------|--|
| Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour | 4 | 3 |
| | 3 | 3 a |
| | 2 | 90 min |
| | 90 min | 90 min |
| Fire barriers having a required fire resistance rating of 1 hour: Shaft exit enclosure and exit Passageway walls Other fire barriers | 1 | 1 |
| | 1 | 45 min |
| | | |
| Fire partitions | 1 | 30 min |
| Corridor walls | 1 | 30 min |
| Other fire partitions | 1 | 45 min |
| Exterior walls | 3 | 90 min |
| | 2 | 90 min |
| | 1 | 45 min |

- a) two doors each with a fire protection rating of 1 1/2 hours, installed on opposite sides of the same openings in a fire wall, shall be deemed equivalent in fire protection rating to one 3- hour fire door

MEANS OF EGRESS

A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or a structure to a public way. The means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

Accessible Means of Egress

A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge, a horizontal exit or public way.

Emergency Escape and Rescue Openings

An operable window, door or other similar devices that provides for a means of escape and access for rescue in the event of an emergency

Egress Width Per Occupant Served

| | Without sprinkler system | | With sprinkler system | |
|--|---------------------------------------|--|---------------------------------------|-------|
| | Stairways (Inches per occupant) | Other egress components (Inches per occupant) | Stairways (inches per occupant) | Other |
| Occupancies other than those listed below | 0.3 | 0.2 | 0.2 | 0.15 |
| Hazardous; H-1, H-2, H-3 | 0.7 | 0.4 | 0.3 | 0.2 |

Minimum number of Exits for Occupant Load

| Occupant load | Minimum number of exits |
|----------------------|--------------------------------|
| 1- 500 | 2 |
| 501- 1,000 | 3 |
| More than 1,000 | 4 |

Fire Escape Stairs

The minimum width of fire stairs and landing shall not be less than 44 feet.

Headroom

Stairways shall have a minimum head room clearance of 84 inches measured vertically from a line connecting the edge of the nosing. The minimum clearance shall be maintained the full width of the stairway and landing.

Stair Treads and Risers

Minimum stair riser is 6 inches and maximum is 8 inches

Stair tread depths shall be 11 inches minimum. The riser height shall be measured vertically between the leading edges of adjacent treads.

Dimensional Uniformity

Stair treads and risers shall be of uniform size and shape. The tolerance between the smallest riser or between the largest and smallest tread shall not exceed 0.375 inches in any flight of stairs.

Stairway Landing

There shall be a floor or landing at the top and bottom of each stairway. The width of the landings shall not be less than the width of the stairways. Every landing shall have a minimum dimension measured in the direction of travel equal to the width of the stairway. Such dimension need not exceed 48 inches where the stairway has a straight run.

Exceptions

- Doors openings onto a landing shall not reduce the landing to less than 30 inches. When fully open, the door and door handle shall not project more than 7 inches onto a landing.

Fire Stairs floor number signs

A sign shall be provided at each floor landing in interior vertical exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the stair enclosure and the identification of the stair. The signage shall state the storey and direction to the exit discharge and the availability of roof access from the stairway for the fire department. The sign shall be located 5 feet above the floor landing in a position which is readily visible when the doors are in the open and closed positions

Handrails

Stairways shall have handrails on each side. Handrails shall be adequate in strength and attachment.

Height

Handrail height, measured above stair tread nosing, or finish surface of ramp shall be uniform, not less than 34 inches and not more than 38 inches.

Continuity

Handrail gripping surface shall be continuous, without interruption by newel posts or other obstructions.

Ramps

- For ramp gradient with 1:7.5 transition space of 8.5 ft length shall be provided at start and termination of ramp with gradient of 50% of the main ramp gradient
- For total climb of 3.3ft (1m), the above shall be exempted

Slope

Ramps used as a part of means of egress shall have a running slope not steeper than one unit vertical in 12 units horizontal (8 percent slope). The slope of other ramps shall not be steeper than one unit vertical in eight units horizontal.

Cross Slope

The slope measured perpendicular to the direction of travel of a ramp shall not be steeper than one unit vertical in 48 units horizontal (2% slope)

Vertical rise

The rise for any ramp run shall be 30 inches maximum.

Enclosures required

Interior fire exit stairs and interior fire exit ramps shall be enclosed with fire barriers. Exit enclosures shall have a fire resistance rating of not less than 2 hours. An exit enclosure shall not be used for any purpose other than means of egress. Enclosures shall be constructed as fire barriers.

Penetrations

Penetrations into and openings through an exit enclosure are prohibited except for required exit doors, equipment and ductwork necessary for independent pressurization, sprinkler piping, standpipes, electrical raceway for fire department communication and electrical raceway serving the exit enclosure and terminating at a steel box not exceeding 16 square inches. There shall be no penetrations or communication openings, whether protected or not, between adjacent exit enclosures.

Ventilation

Equipment and ductwork for exit enclosure ventilation shall comply with one of the following items:

1. such equipment and ductwork shall be located exterior to the building and shall be directly connected to the exit enclosure by ductwork enclosed in construction as required for shafts
2. where such equipment and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the exhaust shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.

3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.

In each case, openings into the fire –resistance rated construction shall be limited to those needed for maintenance and operations and shall be protected by self closing fire resistance rated devices

Exit enclosure ventilation systems shall be independent of other building ventilation systems.

Enclosure exit

A smoke proof enclosure or pressurized stairway shall exit into a public way or into an exit passageway, yard or open space having direct access to a public way. The exit passageway shall be without other openings and shall be separated from the remainder of the building by 2 –hour fire resistance rated construction.

Enclosure Access

Access to the stairway within a smoke proof enclosure shall be by the way of a vestibule or an open exterior balcony

Exit Passageways

Exit passageways shall not be used for any purpose other than as a means of egress.

Width

The exit passages shall not be less than 44 inches, except for exit passageways serving an occupant load of less than 50 shall not be less than 36 inches in width

Penetrations

Penetrations into and openings through an exit passageway are prohibited except for required exit doors, equipment and ductwork necessary for independent pressurization, sprinkler piping, stand pipes, electrical raceway for fire department communication and electrical raceway serving the exit passageway and terminating at a steel box not exceeding 16 square inches. There shall be no penetrations or openings, whether protected or not, between adjacent exit passageways.

Exit Access Travel Distance

| Occupancy | Without sprinkler system (feet) | With sprinkler system (feet) |
|-----------------------|--|---|
| F-1 (Moderate Hazard) | 150 | 200 |
| F-2 (Low Hazard) | 200 | 300 |
| H-1 (High Hazard) | Not permitted | 75 |
| H-2 (High Hazard) | Not permitted | 100 |
| H-3 (High Hazard) | Not permitted | 150 |

CHAPTER 8

COMPLETION OF BUILDINGS

1. A Licensee and /or Sub-Lessee shall within 30 days of completion of building, report in writing of such completion to CBKC through National Industrial Parks Manager. CBKC will issue completion certificate to that effect. The requirements for which are as follows:
 - Date of completion
 - As built drawings in a compact disc format
 - Any violation reported
 - Any demolition occurred
2. Every such building to which completion certificate is be issued shall be inspected by CBKC. If it is found to have been constructed in violation or contravention of any provisions of these Bylaws, the CBKC may approve the alteration or demolish the violated portion.
3. If building or any part thereof is proved to be in a state which is likely to cause damage or is dangerous in any manner whatsoever to worker(s) or the neighboring building(s), the National Industrial Park's Manager may issue notice requiring the buyer and/or lessee to either demolish or repair such part within ten (10) days of the issue of such notice. A copy of such notice shall be forwarded to office of EMC or NIP for information and to take necessary action.
4. If a building is required to be demolished and such requirement is not completed within the specified period, the CBKC may demolish through its own agency and the cost incurred thereon shall be paid by the Licensee and /or Sub-Lessee.

Form A & B

These will be available in the office of the Cantonment Board Korangi Creek on payment of usual fee.

SPECIMEN 'FORM A':

**Owned by Government of Pakistan
NATIONAL INDUSTRIAL PARKS DEVELOPMENT
AND MANAGEMENT COMPANY**

(KORANGI CREEK INDUSTRIAL PARK)

Zone _____

Plot No. _____ Total Area _____ sq.ft.(sq.m)

Applicant _____

Nature of industry & product: _____

**APPLICATION FOR PERMISSION TO
UNDERTAKE CONSTRUCTION OF BUILDING UNDER
THE BUILDING REGULATIONS OF KORANGI CREEK INDUSTRIAL PARK**

To

The National Industrial Parks Engineer
KCIP

No. _____

Sir,

I/we hereby apply for permission to execute the work of erecting/re-erecting a building of the following description at Plot No. _____ Zone _____

2. The following papers and a CD containing them accompany this Application:-

Site Plan Sheets _____ Copies _____

Building Plan Sheets _____ Copies _____

Specifications Sheets _____ Copies _____

(Form "A" and "B")

3. The plans and specifications have been drawn by M/s. _____

_____(Professional Qualification)

_____.

4. The construction of the building will be supervised by

_____(Professional Qualifications)

_____.

5. I/we herewith certify that I/We know and accepted the Korangi Creek Industrial Park Building Regulations and undertake that the construction work will be done in accordance with these Building Regulations and the sanctioned plan.

SPECIMEN 'FORM B'

Owned by Government of Pakistan

NATIONAL INDUSTRIAL PARKS DEVELOPMENT

AND MANAGEMENT COMPANY

(KORANGI CREEK INDUSTRIAL PARK)

Zone _____

Plot No. _____ Total Area _____ sq.ft.(sq.m)

Applicant _____

Nature of Industry & Product _____

SPECIFICATIONS:

| | |
|---|--|
| 1. The materials and methods of construction to be used for:- | |
| a. Foundation | |
| b. Load bearing walls | |
| c. Pillars and columns | |
| d. Partitions | |
| e. Slabs, beams & Joints | |
| f. Roof construction | |
| g. Roof Covering | |
| h. Fire Places | |
| i. Damp proof course | |
| j. Floors | |

| | |
|---|--|
| 2. The number of storeys of which the building will consist of. | |
| 3. The purpose or purposes for which it is intended to use the building | |
| 4. Percentage of built up area | |

| | |
|---|--|
| <p>5. a. The number of persons likely to occupy the building.</p> <p>b. Floor area per person in sq.ft (sq.m)</p> <p>c. Breathing space per person in cu.ft (cu.meters)</p> | |
| <p>6. The number of toilet seats and urinals to be provided.</p> | |
| <p>7. The manner in which the drainage of the premises will be disposed of.</p> | |
| <p>8. Proposed fire precautions</p> | |
| <p>9. In case of minor alterations or additions for sanctioned plan:</p> <p>a. A description of the alterations or additions proposed</p> <p>b. The materials to be used for such alterations or additions</p> <p>c. The date of sanction of previous applications, plans, and specifications of which are relied upon for obviating the need to submit full plans and specifications of whole building</p> | |
| <p>10.</p> | |

Address _____

Date _____

Signature of the Applicant