



GUIDE LINES

FOR THE

CONSTRUCTION OF

BUILDINGS IN

KARACHI EXPORT

PROCESSING ZONE (KEPZ)

A PROJECT OF

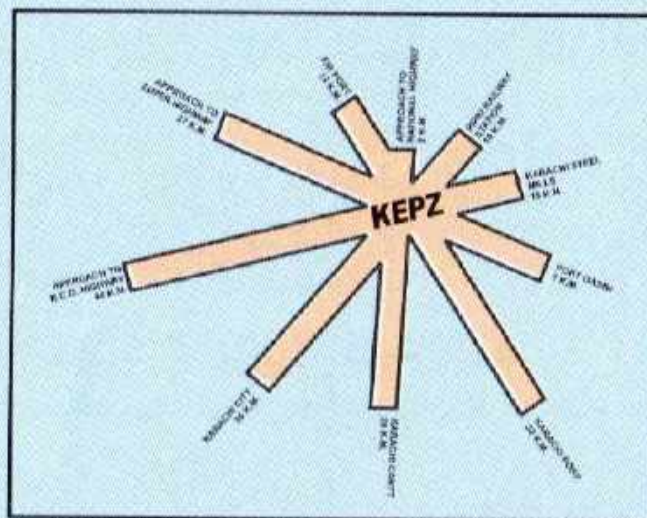
Export Processing

Zones Authority



Karachi Export Processing Zone Pakistan

GUIDE LINES FOR THE CONSTRUCTION OF BUILDINGS IN KARACHI EXPORT PROCESSING ZONE (KEPZ)



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A PROJECT OF
**Export Processing
Zones Authority**

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A. BACKGROUND INFORMATIONS

A.1 GEOGRAPHICAL LOCATION

65°E 25°N, approximately

A.2 SEISMICITY

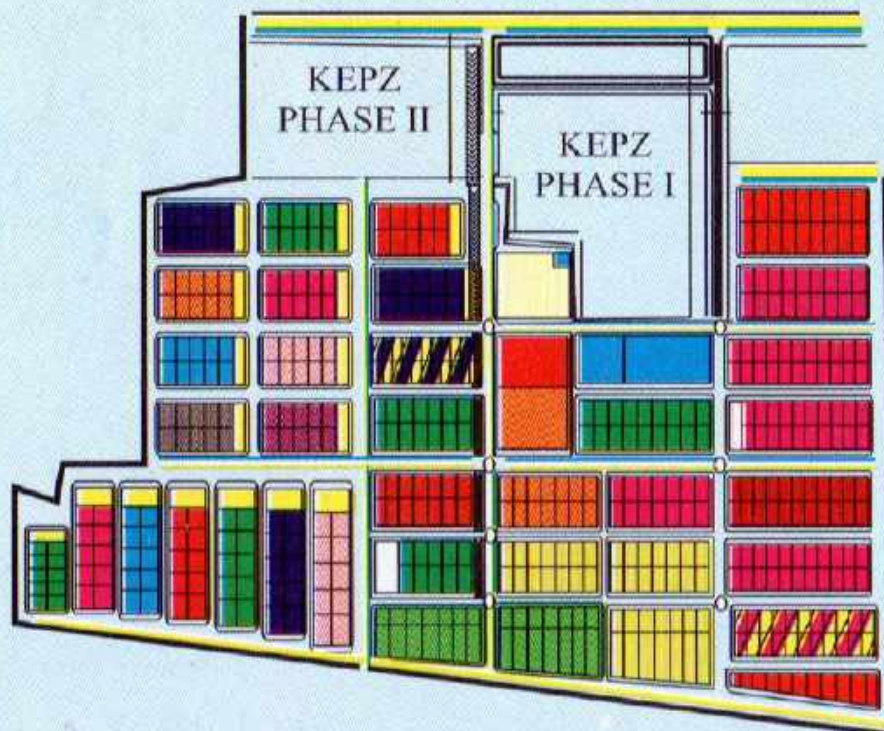
Seismic Zone 2-B as per uniform building Code (UBC) 2002

A.3 SOIL CONDITIONS

Generally, soft ground, Hetergenous strata comprising sand, gravel, sandy silt and claying silt at the different depths.

A.4 BEARING CAPACITY OF SOIL

Tentative value of 1.0 kg/cm^2 is recommended for the design of shallow foundations. Sulphate resisting cement is recommended for the construction of all types of foundations upto plinth level. CBR value of 05 based on soaked condition may be used for pavement design. For multistory buildings structures and deep foundation soil testing is mandatory.



CLIMATE CONDITIONS AT KEPZ

A.5 TEMPERATURE

The minimum and maximum temperatures vary between 10°C and 35°C .

A.6 WIND

From March to October, the predominant wind direction is from South-West while during winter it is from North-East. The wind velocity seldom exceeds 20 knots. For design purposes, wind velocity may be taken as 40 knots.

A.7 RAINFALL

The annual rainfall during last 5 years is as follows

YEAR	RAINFALL (mm)
1997	150.1
1998	82.4
1999	14.5
2000	46.9
2001	100.4
2002	10.0

A.8 HUMIDITY

Relative humidity is 45% to 47% in the evening and 65% to 90% in the morning hours. The humidity is maximum during the month of July, August and September and minimum in December and January.

B. GENERAL REQUIREMENTS OF CIVIL CONSTRUCTION WORKS

B.1 DOCUMENTS TO BE SUBMITTED

The following documents in triplicate, duly prepared by qualified Engineers and Architects and bearing their addresses, should be provided to the Authority for the approval of drawings.

- B.1.1 Copy of site plan of the plot in order to identify the plot.
- B.1.2 Layout plan showing the dimensions of the plot and relative location of the all the structures and building a well as open areas, parking places, green belts etc.
- B.1.3 Geo-technical report.
- B.1.4 Structural design of all the buildings and structures Shown on the layout plan.
- B.1.5 Floor plans, elevations and cross-sections of all the structures and buildings.
- B.1.6 Schedule of doors and windows.
- B.1.7 Details of services including water supply, sanitary, strom water drains, pneumatic and electrical services, gas supply (plumbing work to be carried out by a Licensed Plumber)
- B.1.8 Details of Electrical wiring, distribution boards, transformers and switches etc. (Electrical works to be carried out through a licensed electrical contractor)
- B.1.9 Certificate of the Architect that building drawings confirm to EPZA guide lines.
- B.1.10 Certificate of the Architect/Engineer regarding soundness and stability of the building

B.1.11 After the Construction is Complete and before occupation or use of the buildings, the Architect shall submit a completion certificate for acceptance by EPZA.

B.2. VENTILATION, SANITATION, WATER SUPPLY AND DRAINAGE REQUIREMENT

B.2.1 All comfort rooms to be provided with the exterior windows or ducts with exhaust fans conforming to the requirements of Pakistan building code. Following table is given as a rough guide for the number of urinals and W.Cs to be provided.

WATER CLOSETS & URINALS

a.	<u>No. of Person</u>	<u>No. of Urinal</u>	<u>No. of W.Cs</u>
	1 - 9	1	1
	10-24	2	1
	25-49	3	2
	50 75	4	2
	75-100	5	3

b. One W.C per additional 50 persons (one urinaal per additional 30 persons)

c. There shall be one shower per 15 persons, if exposed to excessive heat or poisonous or infectious or irritating materials.

d. Where female employees are working, suitable numbers of separate W.Cs and showers should be provided.

B.2.2. Adequate number of urinals closets and washing places etc. should be provided at the each floor which should be well ventilated through open spaces.

B.2.3. There shall be one drinking fountain per 30 persons, which should not be installed in the toilet room.

B.2.4. The underground water tank should have a minimum capacity 03 days consumption.

B.2.5 Waste water, which is likely, to affect adversely biological treatment of sewerage, damage sewer lines and appurtents should be pre-treated within the factory premises before discharging into the external sewer lines.

B.3. CONSTRUCTION SUPERVISION

Building construction supervision should be carried out by qualified Engineers and architects and their names and addresses be supplied to Authority.

B.4. CONNECTION OF UTILITIES

Approach from road to the factory gate, water, gas, electricity, telephone, telex and other utilities will be provided at investor cost.

B.5. INSTALLATION OF SECURITY FIRE FIGHTING EQUIPMENT ETC.

The responsibility for the safety and security of the building, structures equipments and goods in the building rests with the investor. The investors are advised to install fire hydrants and fire extinguishes at suitable places to ensure safety.

C. OTHER POINTS FOR DESIGN AND CONSTRUCTION OF FACTORY AND OTHER BUILDINGS

- C.1 The built up area shall not exceed 72% of the total area of a plot.
- C.2 Since subsequent lateral expansion may not be possible, it is in the interest of investor to have adequate foundations to cater for expansion in the vertical direction from basement to upper three floors.
- C.3 All buildings, except those allowed within the compulsory vacant strips, should have permanent open spaces as stated below, 04 meters from road side i.e. front, 1.5 meter from rear and any one side and 3 meters from other side
- C.4 Structures which could be provided in compulsory open spaces in factories buildings as well as in trading / were house buildings are:
- a. Gate House of reasonable size.
 - b. Time office of reasonable size
 - c. Underground tanks.
 - d. Septic tanks for sewerage and settling tank if necessary.
 - e. Gass & electricity meter rooms.
- C.5 Open spaces shall be clearly shown on the site & detail plans.
- C.6 Minimum height of plinth above road or drain top shall be 60 mm.
- C.7 Minimum clear height of each floor shall be 4.0 meter for work places and 3.0 for offices.
- C.8 The height of boundary wall shall not be more than 2.0 meters above the plinth level of factory building.
- C.9 For storage of explosives, details of materials and permission from Government ExplosiveInspector shall be produced.
- C.10 **STRUCTURAL REQUIREMENTS**
- C.10.1 Depth of footings of the main factory building shall not be less than 1.50 meter from the finished grade line.

C.10.2 Determination of soil bearing capacity shall be the responsibility of the Design Engineer.

C.10.3 There should be no projection of footings beyond property lines.

C.11 **STORE AREA**

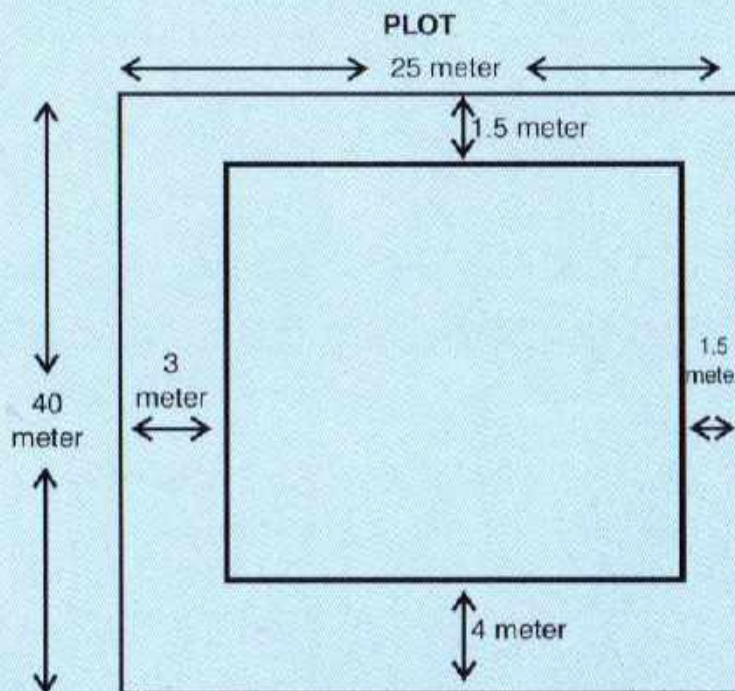
The factory plan shall clearly indicate special areas for the safe and secure storage of incoming and outgoing goods. These should be so located that the goods stored therein could be inspected by the Custom Authorities as and when required without interfering factory production. In all other respect they should fulfil the requirements of a bonded warehouse. Store areas shall be so designed that the materials stored therein is secured against theft, pilferage or any other misuse by unauthorized persons. The goods shall also be safe from the weather effects, fire and other hazards.

C.12 **SECURITY POST**

The building shall include suitable area for checking of the personnel and handling of the incoming and outgoing goods. The area if located in the compulsory open space shall not be covered.

C.13 **TYPICAL FACTORY LAYOUT**

The building should not be used or occupied unless the Architect or Engineer submits the completion certificate and same is accepted by Authority.



ROAD
TYPICAL FACTORY LAYOUT

D. CONSTRUCTION OF BANK BUILDING

D.1 The plot and allowable covered area is shown below.



TYPICAL BANK LAYOUT

- D.2 An arcade of 2.5 meters width shall be provided through out front face.
- D.3 Permanent front open spaces shall be 9.0 meters.
- D.4 The height of plinth shall be 600 mm above adjacent road or drain.
- D.5 The height of each floor shall be 3.5 meters.
- D.6 Maximum permissible number of stories shall be ground plus three floors.
- D.7 All the rooms except strong rooms and store rooms shall abut open spaces of adequate dimensions.
- D.8 The sanitary pipes shall not be visible from out side roads and the same shall be easily accessible for maintenance.
- D.9 The building should not be used or occupied unless the Architect or Engineer submit the completion certificate and the same is accepted by Authority.

E. CONSTRUCTION OF COMMERCIAL BUILDINGS

- E.1 The height of plinth shall be 600 mm above adjoining road or drain top.
- E.2 The height of each floor shall be 3.5 meters.
- E.3 Maximum permissible number of stories shall be ground plus two floors.
- E.4 All rooms except store rooms shall abut open spaces.
- E.5 No Projection except a sun-shade of 600 mm width is allowed on open spaces.
- E.6 No Projection expect a sun-shade of 600 mm width is allowed on road and at a height of not

less than 3.5 meters above plinth level.

The sanitary pipes shall not be visible from and rear sides and shall be easily accessible for maintenance.

The building should not be used & occupied unless Architect or Engineer submit completion certificate and the same is accepted by Authority.

CONSTRUCTION OF WAREHOUSE BUILDING

Maximum possible area of a plot can be covered provided following open spaces are provided.

- a) Minimum 2-meters wide open space throughout frontage for plot for area 400 to 600 meter square.
- b) Minimum 2-meter wide open space throughout frontage and 3-meter wide open space throughout one side predetermined by Authority for plot more than 600 meter sq in area.

Maximum permissible number of stories shall be ground plus upper two floors.

- F.3 The clear height from floor to ceiling of any floor shall not be less than 3.00 meters.
- F.4 The clear height of plinth shall not be less than 600 mm above adjoining road or storm water drain top.
- F.5 Roof or sun-shades shall not project more than 600 mm on compulsory open spaces.
- F.6 Roof or sun-shades shall not project out side the plot limits.
- F.7 Foundation of buildings and boundary wall shall not project out side the plot limit.
- F.8 The wall of the building should be able to bear accidental lateral pressure.
- F.9 The construction material shall be fire proof.
- F.10 The building should be so constructed that it is secured from burglary as far as possible.
- F.11 The building shall not be used and occupied unless licenced Architect or Engineer submit completion certificate and the same is accepted in writing by the Authority.



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