FREQUENTLY ASKED QUESTIONS (FAQ)

Q1. What is the fire rating for building having more than 2 basements?

A1. All structural members up to and including the floor of the lowest level of discharge of underground buildings more than 7000 mm below or more than two level below the lowest level of exit discharge (i.e. All High depth Underground Buildings or Structures) shall be at least 2 hours fire rated construction.

Q2. What is the definition of a high-rise building or structure?

A2. The occupancies or Multiple and Mixed occupancies, facilities, buildings and structures having total height of occupiable or usable space of more than 23 Meters above the lowest grade or lowest level of Fire Service Access into that occupancy is categorized as Highrise Building.

Q3. What is the definition of a midrise building or structure?

A3. The occupancies or Multiple and Mixed occupancies, facilities, buildings and structures having total height of occupiable or usable space between 15 Meters to 23 Meters from the lowest grade or lowest level of Fire Service Access into that occupancy is categorized as Midrise Building.

Q4. What is the definition of a low-rise building or structure?

A4. The occupancies or Multiple and Mixed occupancies, facilities, buildings and structures having total height of occupiable or usable space up to 15 Meters from the lowest grade or lowest level of Fire Service Access into that occupancy is categorized as Low-rise Building.

Q5. What is the definition of a low depth structure or building?

A5. A structure or a building with up to two basements or up to 7 m below the level of exit discharge.

Q6. What is the definition of a high depth structure or building?

A6. A structure or a building with more than two basements or more than 7 m below the level of exit discharge.

Q7. What is the fire rating and the minimum size of the Emergency Command Centre?

A7. The Emergency command centre shall be separated from other parts of the same building by compartment walls and floors having fire resistance of at least 1 hour with fire suppression system. Minimum size shall be 8.9 m².

Q8. At what level shall the fire pump be installed within the building?

A8. Fire pumps shall be located on the ground floor or below grade level with protected dedicated access from the fire engine access level.

Q9. At what level shall the intermediate fire pumps and water tanks be located for high-rise buildings?

A9. Where multiple pump sets are required in a Highrise building, Intermediate Fire Pumps and Water tanks shall be located at not more than 90 m intervals from the First Fire Pump located at the lowest level of the structure.

Q10. When can the separation between the kitchen and the dining area be exempted?

A10. Separation requirement for kitchen could be exempted when all the cooking facilities in the kitchen are fitted with an approved extinguishing system such as Kitchen hood suppression. Separation requirement for kitchen could also be exempted when an eating establishment is separated from other parts of the same building by walls and floors having fire resistance of at least 1 hour and doors having fire resistance of at least half an hour.

Q11. What is the maximum size of a kitchen allowed in a non-sprinklered building?

A11. For a non-sprinkler protected building, the floor area of the kitchen compartment shall not exceed 150 m².

Q12. What is the fire rating for the separation between theatre, cinema or concert hall from other parts of the building?

A12. A theatre, cinema or concert hall shall be separated from other parts of the same building, which is of a different purpose group, by compartment walls and floors having a fire resistance of at least 2-hour. If the building is protected by an automatic sprinkler system, the fire resistance rating of the compartment walls or floors can be reduced to 1-hour.

Q13. What is the fire rating for hotel bedrooms?

A13. Each hotel bedroom shall be compartmented from adjoining rooms and other parts of the same building by construction having fire resistance rating of at least 1 hour.

Q14. What is the fire rating for labor accommodation bedroom?

A14. Each labor accommodation bedroom shall be compartmented from adjoining rooms and other parts of the same building by construction having fire resistance rating of at least 1-hour.

Q15. What are the kitchen fire rating requirements for a labor accommodation?

A15. Kitchens are only allowed on the ground floor and shall be enclosed with minimum 1-hour fire rated compartment wall, including ½-hour fire rated door. Kitchen shall be separated by 1 hour fire rating and a protected corridor away from the dormitory sleeping area on the ground floor.

Q16. What is the fire rating required for motor vehicle workshop?

A16. A motor vehicle workshop shall be separated from any other part of the same building by compartment walls and floors having fire resistance of not less than 2 hours.

Q17. What is the fire rating and ventilation requirement for a spray painting booth or for any spray painting process?

A17. Areas in which spray painting or other allied processes are performed or carried out, shall be separated from other parts of the same building by compartment walls and floors having fire resistance of not less than 2 hours. Spray painting booths shall have built in vapor extraction system.

Q18. What is the size requirement for cold room and the fire rating of the construction?

A18. Where a cold room has a floor area exceeding 20 m^2, a separate outer layer of non-combustible construction, including the door, having minimum 1-hour fire resistance rating (with sprinkler), shall be provided to compartmentalize the cold room enclosure from other areas. Provision of the fire resisting outer layer enclosure, including the fire door to the cold room would not be required if the cold room has a floor area not exceeding 20 m^2 and is

sprinkler protected. The storage materials shall not include highly flammable chemicals. Cold room lesser than 20 m² provided with at least one hour fire rating compartment, need not be provided with sprinklers provided that the storage shall not include flammable materials.

Q19. What shall the maximum allowable area of a mezzanine floor?

A19. The aggregate area of mezzanines within a room, other than those located in special-purpose industrial occupancies, shall not exceed one-third the open area of the room in which the mezzanines are located.

Q20. What is a breeching inlet?

A20. A connection through which the Civil Defence fire department can pump supplemental water into the sprinkler system, standpipe, or other system, furnishing water for fire extinguishment to supplement existing water supplies.

Q21. What is the definition of fire access level?

A21. Level where Civil Defence Fire Appliances (Fire Truck/Engine) are deployed and where fire fighters have direct access into the building.

Q22. What is the definition of fire engine access road?

A22. The road to the building or structure to allow access for Civil Defence fire-fighting and rescue apparatus.

Q23. What is the definition of fire engine access way?

A23. The path adjacent to the building or structure to allow operational setup for Civil Defence fire-fighting and rescue apparatus such as Aerial Appliances.

Q24. What is a landing valve?

A24. A 65 mm diameter water outlet normally located inside or near the staircase landing for trained or Civil Defence fire fighters to use during fire.

Q25. What is the maximum distance allowed between the edge of a fire engine access way and the breeching inlet?

A25. Buildings fitted with standpipes and automatic sprinkler system shall have access ways for pumping appliances within 18 m of the breeching inlet. The breeching inlets shall be visible from the access ways.

Q26. What is the spacing requirement for private fire hydrants along fire engine access way and access road?

A26. Spacing between Private Hydrants along Fire Engine access way and access road are as follows:

i. Residential and Commercial Occupancies shall be 120 m
ii. Light Hazard Storage Occupancies shall be 100 m
iii. Ordinary Hazard Storage Occupancies shall be 100 m
iv. Light Hazard Industrial Occupancies shall be 100 m
v. Ordinary Hazard Industrial Occupancies shall be 100 m
vi. High Hazard Occupancies shall be 60 m

Q27. What is the minimum flow rate for each private fire hydrant?

A27. Minimum flow rate for each Private fire hydrant shall be 500 Gallons per Minute

Q28. What is the minimum pressure required for fire hydrant in relation to landing valves?

A28. Minimum Pressure required for Private fire hydrant is 6.9 bars.

Q29. What is the minimum duration of fire fighting water supply for private fire hydrant?

A29. Private Fire Hydrant Water supply for fire fighting shall be for 2 hours.

Q.30. What is the height limitations for a fire hydrant?

A30. The center of a hose outlet shall be not less than 457 mm and not more than 914mm above final grade.

Q31. How far shall the distance be between the fire engine access way and any access opening of a building?

A31. Access way shall be positioned so that the nearer edge shall be not less than 2 m or more than 10 m from the centre position of the access opening, measured horizontally.

Q32. What is the gradient requirement for a fire engine access way?

A32. Access way shall be laid on a level platform or if on an incline, the gradient shall not exceed 10%.

Q33. What is the maximum allowable dead end distance for a fire engine access way?

A33. Dead-end access way and fire engine access road shall not exceed 45 m in length or if exceeding 45 m, be provided with turning facilities.

Q34. What is the minimum height clearance along fire engine access way and access road?

A34. Overhead clearance of access way and fire engine access road shall be at least 4.5 m for passage of fire fighting appliances. Overhead obstruction to access way could be entrance gate, link or bridges connecting buildings.

Q35. In what type of building shall a fire lift be required?

A35. In any building which is classified as high-rise or High depth building having more than 2 level of basement, there shall be provided at least one fire lift, which shall be contained within a separate protected shaft or a common protected shaft containing other lifts subject to such other lifts being served at each storey by a fire fighting lobby.

Q36. What is the minimum dimension of a fire lift car?

A36. Minimum dimension of a Fire lift car shall be of 1950mm either in length of breadth.

Q37. What is the minimum width of a fire fighting staircase?

A37. Fire-fighting stairs should be a minimum of 1200 mm wide.

Q38. What is the size requirement for a fire fighting lobby?

A38. The fire fighting lobby shall have a clear floor area of not less than 5 m^2. The clear floor area should not exceed 20 m^2 for spaces serving up to four lifts or 5 m^2 per lift for spaces serving more than four lifts.

Q39. Where can landing valves be installed in accordance to preference?

A39. Landing valves shall be located in accordance to the following preference:

i. In fire Fighting lobby (if provided), for the first landing valve.
ii. In Fire fighting or exit staircase, for the first landing valve.
iii. In smoke free enclosure or external corridor.
iv. In the common corridor or area within a protected shaft.

Q40. What is the length of coverage for one landing valve?

A40. Every part of the floor area shall be within 30 m coverage of a landing valve.

Q41. When shall an emergency command centre be provided?

A41. An Emergency Command Centre shall be provided in any building which is 'Highrise' with 23 m or more in height with the exception of One-and-Two-Family Dwelling and such Emergency Command Center shall have the following:

i. Fire lift
ii. Emergency voice communication system
iii. Engineered smoke control system.

Q42. What is the size requirement for an emergency command centre?

A42. An Emergency Command Centre shall be of adequate size to house all the terminals and supervisory/control equipment, etc of the building's fire protection/detection systems and a free working space of at least 8.9 m2 with no dimension lesser than 2440 mm.

Q43. Where shall the emergency command centre be located?

A43. An Emergency Command Centre shall be located adjacent to the fire lift lobby at the designated storey of the building (i.e. the lobby of the building on the first storey or immediately adjacent thereto)

Q44. What is the swing direction for doors for fire exits?

A44. Doors required to be of the side-hinged or pivoted-swinging type shall swing in the direction of egress travel where serving a room or area with an occupant load of 50 or more. A door shall swing in the direction of egress travel under either of the following conditions:

i. Where the door is used in an exit enclosure
ii. Where the door serves a high hazard contents area

Q45. What is the type of construction for exit staircase shaft based on the height of the building?

A45. Exit stairs serving High-rise buildings, Midrise buildings, High depth Underground buildings and buildings connecting four or more stories shall be constructed of RCC (Reinforced Concrete) with a minimum of 2 hour fire rating. Exit Stairs serving Lowrise buildings, Lowdepth Underground buildings and buildings connecting Three or less stories shall be protected with 2 hour fire rated construction.

Q46. Can spiral stairs be used for egress?

A46. Spiral Stairs is not allowed as a part of means of egress.

Q47. Can interlocking or scissor stair be treated as 2 staircases?

A47. Interlocking or scissor stairs shall be considered only as a single exit.

Q48. Where shall floor diagrams be provided?

A48. A floor diagram shall be provided in staircase landings on the wall beside the exit door. Floor diagrams shall also be provided beside fire alarm panels, in smoke-free enclosures, in fire fighting lobbies and in individual rooms of hotels and health care occupancies.

Q49. What information shall a floor diagram have?

A49. Floor diagrams shall show the actual floor layout, exit stairways locations, corridors, rooms, landing valves, hosereel, fire extinguishers, lift lobbies and other useful information for fire department as well as occupants.

Q50. What is the mode of ventilation for exit staircases in highrise buildings (23m or more in height)?

A50. Every escape staircase serving buildings of 23 m in height or more must be made a smoke proof enclosure. The means of achieving a smoke proof enclosure should be by pressurization.

Q51. What is the fire rating for a smoke proof enclosure?

A51. A smoke proof enclosure shall be enclosed from the highest point to the lowest point by barriers having 2-hour fire resistance ratings.

Q52. What is the fire rating requirement for an exit passageway?

A52. The exit passageway shall be separated from the remainder of the building by a 2-hour fire resistance rating.

Q53. What is the required mode of ventilation for non-high rise buildings?

A53. Staircase ventilation for non-highrise buildings shall be provided with natural, mechanical ventilation or by providing smoke proof enclosures.

Q54. What is the egress final discharge requirement for sprinkler protected buildings?

A54. For sprinkler protected buildings, not more than 50 percent of the required number of exits, and not more than 50 percent of the required egress capacity, shall discharge through areas on the level of exit discharge.

Q55. What is the minimum separation distance between two exits?

A55. The minimum separation distance between two exits or exit access doors in a sprinklered building shall be not less than one-third the length of the maximum overall diagonal dimension of the building or area to be served. This distance shall be half the diagonal for non-sprinklered buildings.

Q56. What is the minimum clear width of a corridor or passageway?

A56. The clear width of any corridor or passageway serving an occupant load of 50 or more shall be not less than 1200 mm.

Q57. In what situation is single exit permitted in a non-sprinklered apartment building?

A57. Any non-sprinklered dwelling unit shall be permitted to have a single exit, provided that one of the following criteria is met:

i. The dwelling unit has an exit door opening directly to the street or yard at ground level.
ii. T he dwelling unit has direct access to an outside stair and serves a maximum of two units, both of which are located on the same floor.
iii. The dwelling unit has direct access to an interior stair that serves only that unit and is separated from all other portions of the building by fire barriers having a minimum 1-hour fire resistance rating, with no opening therein.
iv. Travel distance from the anywhere in the unit shall not exceed 23m to the final discharge.
v. Total floor area is less than 500 m^2

Q58. In what situation is a single exit permitted in a sprinklered apartment building?

A58. Any building that is protected throughout by an approved, supervised automatic sprinkler system has four or fewer stories, and has not more than four dwelling units per story shall be permitted to have a single exit, provided that all of the following conditions apply:

i. The stairway is separated from the rest of the building by barriers having not less than a 1-hour fire resistance rating, with self-closing 1-hour fire door assemblies protecting all openings between the stairway enclosure and the building.
ii. The stairway does not serve more than one-half story below the level of exit discharge.
iii. All corridors serving as access to exits have a minimum 1-hour fire resistance rating.
iv. There is not more than 35 ft (10.7 m) of travel distance from the entrance door of any dwelling unit to the exit staircase
v. One-half-hour fire-rated horizontal and vertical separation between dwelling units is provided.
vi. Travel distance from anywhere from the unit to the unit exit door shall not exceed 23m.
vi. Total floor area is less than 500 m^2

Q59. What is the definition of a labor accommodation?

A59. Labor accommodations include buildings or spaces in buildings where sleeping accommodation is provided for workers, with or without meals, but without individual

cooking facilities. The phrase "without individual cooking facilities" refers to the absence of cooking equipment in any room or unit.

Q60. What is the height requirement to install a portable fire extinguisher?

A60. The wall mount type portable fire extinguishers shall be installed in such a way that the top of the fire extinguisher is not more than 1.5 meters above the floor and not less than 30 cm from the bottom of extinguisher to the finished floor.

Q61. What is the minimum number of people required to be trained on basic fire awareness and in the use of portable fire extinguishers?

A61. At least 10 % of the Security personnel, Occupants, Employees and Supervisory personnel of each occupancy shall be trained on basic fire awareness, types, use and operation of fire extinguishers in emergency situation.

Q62. At what level shall floor proximity exit signs be installed?

A62. Where floor proximity exit signs are required in such signs shall be located near the floor level in addition to those signs required for doors or corridors. The bottom of the sign shall be not less than 150 mm, but not more than 455 mm, above the floor.

Q63. What is the function of emergency lights?

A63. The objective of having emergency lighting during emergencies or when the normal lighting of the occupied building fails. The emergency light shall fulfill the following functions:

a. To indicate clearly and unambiguously the escape routes.

b. To provide illumination along such routes to allow safe movement towards and through the exits provided.

c. To ensure that fire alarm call points and fire fighting equipment provided along escape routes can be readily located.

d. To permit operations concerned with safety measures

Q64. Where shall emergency lights be provided?

A64. For all buildings except for One-and-Two-Family Dwelling, emergency lighting shall be provided in all occupancies in the following areas:

i. along exit corridors, egress path, lobbies and exits staircases

ii. Over area if there are no explicit paths leading to corridors, lobbies and exits.

iii. In hotel rooms or suites.

iv. Educational occupancies used as assembly, i.e. gymnasium, concert halls, auditoriums, theatres.

v. In office rooms more than 60m².

Notwithstanding the requirements in the clause above, emergency lighting shall be provided in the following locations:

i. Lift cars
ii. Emergency command centers
iii. Generator rooms
iv. Basement car parks
v. Fire pump rooms
vi. Areas of refuge within the same building.

Q65. What is the required brightness level of emergency lights?

A65. Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level.

Q66. In what type of occupancies is central battery required?

A66. Central Battery System is not mandatory. However, stand alone self contained luminaries are not allowed as well. The emergency lighting system shall be either Central Battery system or monitored type self contained emergency lighting system which is diagnostic type and shall be automatically monitored and tested through the Building Monitoring System and the fire alarm control unit.

Q67. What is the definition of emergency voice communication (EVC)?

A67. A system that is interlinked with the fire alarm to give evacuation or emergency messages throughout the premises for all occupants.

Q68. In what type of occupancies requires emergency voice evacuation and communication system?

A68. One way emergency voice evacuation and communication system as well as an emergency command centre shall be provided as follows:

i. For all large buildings with gross floor area greater than 2800 m² or having a total occupant load exceeding 1000 persons and large industrial and warehouse buildings with gross floor area greater than 5000 m².

ii. For all buildings which are categorized as high rise or an assembly.

iii. For hotel or health care occupancies of less than 23m building height.

Q69. In what location are speakers with flashers required?

A69. Speakers with flashers (strobe lights) shall be provided for basement car parks, mechanical or machine rooms, large machining areas of factories (more than 5000m²) and at locations where the ambient noise level is 75db or more.

Q70. What is the fire rating requirement for fire alarm and emergency communication cables?

A70. All circuits necessary for the operation of the notification appliances shall be protected until they enter the evacuation signalling zone that they serve. Any of the following methods shall be considered acceptable as meeting the requirements of this subsection:

i. A 2-hour fire rated circuit integrity (CI) cable

ii. A 2-hour fire rated cable system (electrical circuit protective system)

iii. A 2-hour fire rated enclosure

iv. Buildings fully protected by an automatic sprinkler system and with the interconnecting wiring or cables used for the operation of notification appliances installed in metal raceways

Q71. Where shall manual call point be located?

A71. Distribution of the manual call points should be such that travel distance should not be more than 45m to reach the nearest manual call point. These figures to be reduced to 25m and 16m in limited mobility areas, and where processes of the area result in a likelihood of rapid fire development.

Q72. What is the height requirement to install a manual call point?

A72. The manual call points shall be installed generally at the height of (1.1 – 1.4) m, above floor level and in plain, accessible, well lit and free-hindrances places. Where disable people are expected to operate, height to be lowered to (91cm-1.2m).

Q73. At what level above the ground for raised floors to have smoke detectors within the concealed space?

A73. For raised floors 400mm and above the floor level and/or containing combustible materials shall be provided with smoke detectors.

Q74. At what height between the suspended ceiling and the ceiling level a smoke detector to be provided?

A74. For suspended ceilings which are above 800mm from the ceiling level and/or containing combustible materials, smoke detectors are to be provided.

Q75. In what condition can alarm notification speakers be used for non-emergency purposes?

A75. Speakers used as alarm notification appliances on fire alarm systems shall also be permitted to be used for non-emergency purposes, provided that condition i or ii is met:

i. The emergency command centre is constantly attended by trained personnel.

ii. The speakers and associated audio equipment are installed or located with safeguards to resist tampering or maladjustments of those components essential for intended emergency notification.

Q76. Can alarm notification speakers be used as mass notification speakers?

A76. Speakers used as alarm notification appliances on fire alarm systems shall also be permitted to be used for mass notification systems.

Q77. What is the definition of a class 1 fire fighting system?

A77. Class 1 systems comprises of 65 mm diameter Landing Valve outlets coupled or uncoupled with 65mm diameter, 30 m long re-enforced rubber lined (RRL) hose with multipurpose hose

nozzle for the use of Civil Defence department personnel or other trained fire fighting personnel.

Q78. What is the definition of a class 2 fire fighting system?

A78. Class 2 systems comprises of 25 mm diameter bore for Hose Reel System or 40 mm diameter bore for Hose Rack System, 30 m long dual reinforced rubber hose coupled with 6 or 8 mm bore multipurpose nozzle, for the use of occupants to extinguish small fires or when the fire is at its incipient stages until the arrival of Civil Defence fire fighters.

Q79. What is the definition of a class 3 fire fighting system?

A79. Class 3 system is a combination of both Class 1 & Class 2 systems for the use of occupants and as well as Civil Defence use. In general the class I system equipments are installed in lower level or compartment and class II system equipments in upper level or compartment of a cabinet. Alternatively, because of the multiple use, class III stand pipe system comprising 65 mm diameter landing valve with 65 mm x 40 mm easily removable adapter and coupled with 40 mm diameter, 30 m long fire hose and nozzle may be permitted as a special cases.

Q80. Where shall fire hose stations be located and what is the coverage distance?

A80. The Fire Hose Station should be clearly visible beside the exit way or stairway (maximum allowed 6 meters from exit way or exit staircase). Additional fire hose stations along the exit access corridor, horizontal exit or in the car park floors shall be installed such that all portions of each floor are within 30 m from the fire hose station while measured along the natural path of travel from the hose station.

Q81. At what level of the building shall fire pumps be installed?

A81. Fire Pump shall be located at the lowest level of the building, pumping water upwards. Fire pumps at levels higher than the lowest level of the building with water supply feeding downwards is not allowed.

Q82. What is the arrangement for a dry riser stand pipe system?

A82. Dry riser stand pipe system shall be terminated to a 2-way breeching inlet connection having 100 mm dia flanged outlet with 2 nos of 65 mm dia instantaneous male coupling inlets, located at Fire Access level for Civil Defence.

Q83. What is the pressure limit for a multi wet riser zoning system?

A83. Multiple wet risers' zoning system shall be established in high rise buildings where pressure reducing valve station is utilized with single fire pump set instead of multiple pumping station, to restrict pressure limit with in 12 bar at any Landing valve outlet.

Q84. What is the minimum operating pressure for sprinkler head in ordinary hazard occupancies?

A84. The minimum operating pressure of any sprinkler head for determining the water supply requirements shall be not less than 0.5 bar (7 PSI) in the light hazard occupancy and 1.0 bar (14.5 PSI) in the ordinary hazard occupancies.

Q85. What is the maximum operating pressure in a sprinkler system?

A85. The maximum operating pressure in a sprinkler system shall not be more than 12 bar. Where higher operating pressure is used for the sprinkler system, all the sprinklers, pipes and fittings shall be rated for the higher operating pressure, however the operating pressure shall not be more than 16 bar in any case.

Q86. What shall a fire pump set consist of?

A86. The proposed fire pump set for any water based suppression system including fire hydrants shall consists each of the following:

i. Main Electric Pump
ii. Standby Diesel driven Pump
iii. Electric Jockey Pump
iv. Pump controllers
v. Ancillary valves and fittings

Q87. Where shall the fire pump be located in a building?

A87. Fire Pumps shall be located at the ground floor or Fire Access level at the lowest level of the building, pumping water upwards. Fire pumps at levels higher than the lowest level of the building with water supply feeding downwards is not allowed.

Q88. What shall be height limitation of a building for a mechanical floor to house the transfer fire pump and tank?

A88. Any building higher than 90 m in habitable height from the lowest level of the building shall require a transfer pump set and a transfer water tank located on the mechanical floor.

Q89. What is defined as light hazard occupancies?

A89. The areas and occupancies which are used for non-industrial uses and contains low quantity and less combustible materials which are expected to release less heat release rates during fire condition shall be classified as light hazard occupancies.

Q90. What is defined as ordinary hazard occupancies?

A90. The areas and occupancies used for processing and handling of mainly ordinary combustible materials unlikely to develop intensely burning fires in the initial stages shall be classified as ordinary hazard occupancies.

Q91. What is defined as ordinary hazard group 1?

A91. The areas and occupancies which are used for commercial & industrial uses and contains medium quantity and moderate combustible materials and the storages up to 2.4 meters which are expected to release moderate heat release rates during fire condition shall be classified as Ordinary Hazard group-1.

Q92. What is defined as ordinary hazard group 2?

A92. The areas and occupancies which are used for commercial & industrial uses and contain medium quantity and moderate to high combustible materials and the storages up to 3.6 mtrs which are expected to release moderate heat release rates and the storages up to 2.4 mtrs which are high heat release rates during fire condition shall be classified as Ordinary Hazard group-2.

Q93. What is defined as extra high hazard group 1?

A93. The areas and occupancies which are used for industrial uses and contains high quantity and very high combustible materials which will support fast development of fire and are expected to release very high heat release rates during fire condition and having less or no combustible or flammable liquids & gases shall be classified as Extra high hazard group-1.

Q94. What is defined as extra high hazard group 2?

A94. The areas and occupancies which are used for industrial uses and contain moderate to high quantity of flammable & combustible liquids and gases which will support rapid growth of fire and expected to release very high heat release rates during fire condition shall be classified as Extra High hazard group-2.

Q95. What is the temperature and fire rating of smoke exhaust or extract fans?

A95. Smoke Exhaust or extract fans shall be capable of operating effectively at 400°C for 2 hours.

Q96. What is the minimum distance between air intakes and any exhaust discharge openings?

A96. Openings for the intakes of outdoor air to all air handling systems, mechanical ventilation systems, pressurization systems of exit staircases and internal corridors, and smoke control systems shall be no less than 5m from any exhaust discharge openings.

Q97. When can a concealed space between ceiling and roof or raised floors be used as air plenum?

A97. A concealed space between the ceiling and floor above it, ceiling and roof, or raised floor and structural floor of a building may be used as a plenum provided that the concealed space contains only:

i. Mineral-insulated metal-sheathed cable,
ii. Aluminum-sheathed cable,
iii. Copper-sheathed cable,
iv. Rigid metal conduit,
v. Enclosed metal trunking,
vi. Flexible metal conduit,
vii. Liquid-tight flexible metal conduit in lengths not more than 2 m, or metal-clad cables;
viii. Communication cables for computers, television, telephone and inter-communication system;
ix. Fire protection installations;
x. Pipes of non-combustible material conveying non-flammable liquids

Q98. What is the fire rating of dampers to be installed in ducts penetrating fire walls?

A98. Duct penetrations of fire walls should be avoided. Approved fire dampers shall be provided where air ducts penetrate or terminate at openings in walls or partitions required to have a fire resistance rating of 1 hour or more depending on the fire rating of the wall.

Q99. In which application a fire damper is not required?

A99. A fire damper shall not be required for the following:

i. Clothes Dryer Exhaust Ducts
ii. Hazardous Fume Exhaust Duct
iii. Stairwell Pressurization Ducts
iv. Smoke Extraction Ducts
v. Laundry and Trash Chutes

Q100. What is the type of approved material to be used for the construction of ceiling plenum?

A100. Materials used in the construction of a ceiling plenum shall be noncombustible or shall be limited combustible having a flame spread index of not more than 25 and a maximum smoke developed index of 50.

Q101. In what situation does staircases serving the basement level need to be pressurized?

A101. All fire exit staircases that serve the basement floors shall also be pressurized if the same staircase shafts serving the upper floors are pressurized. Fire exit staircases that only serve the basement which have more than 2 levels or more than 7m below the level of discharge (high depth underground buildings and structures) shall be pressurized. Fire exit staircases that only serve the basement which have less than 2 or levels or less than 7m below the level of discharge (low depth underground buildings and structures) shall be provided with mechanical ventilation.

Q102. At what height shall a building have its exit staircases pressurized?

A102. In any building of which the habitable height exceeds 23 m, any internal exit staircases without adequate provision for natural ventilation shall be pressurized.

Q103. What is the arrangement for multiple injections for staircase pressurization?

A103. A single-point injection system shall not be used where the stairwell height is more than eight stories. Stairwells more than 3 storeys above grade or 15m in height, which ever lower shall be provided with multiple-injection systems.

Q104. What is the minimum rate of mechanical ventilation for internal corridors?

A104. Mechanically ventilated internal corridor shall have a purging rate of at least 6 air changes per hour.

Q105. What is the minimum rate of mechanical ventilation for basements?

A105. The purge rate for basement shall be at least 9 air changes per hour.

Q106. What is the minimum clear height for the smoke layer when designing smoke management systems?

A106. The design smoke layer base shall be above the heads of people escaping beneath it. The minimum height shall be 1830mm

Q107. In what situation smoke removal system for firefighting operation need to be provided?

A107. Smoke removal system for firefighting operation shall be provided where there are no natural ventilation openings or where there no operable panels or windows.

Q108. What is the percentage of opening required for natural ventilation and the distance from the internal corridor?

A108. Naturally ventilated internal corridor shall be by fixed ventilation openings in an external wall and such ventilation openings being not less than 15 % of the floor area of the internal corridor. Natural ventilation opening shall not be more than 9m from any part of the internal corridor.