Fire Fighting and Fire Alarm Norms

1. Low-Rise

    1) Buildings (up to 15m above ground): NA
    2) Buildings (>15m to 30m above ground):
        a) Fire hose cabinet with 30m coverage in/near Fire Staircase
        b) Down with booster pump at terrace

2. Mid-Rise (30 m+ to 70 m ground):

    a. Doors to meter room and electrical duct (if opening into a fire escape staircase or passage thereto) should have a 2 hour fire rating with smoke seal.
    b. Fire hose cabinet with 30 m coverage in/near fire staircase for building exceeding 45m.
    c. Sprinkler in lift lobby (from unit up to staircase).
    d. If non-residential unit, sprinkler to be provided as per NBC requirements. Sprinkler in kitchen & living of each residential unit for buildings > 45 mtrs height above ground. Further, sleeve to be left above door of each bedroom (50 mm dia for 25 mm pipe) and the same shall be closed with a PVC plate (sleeve blocker) having preferably the same colour as the wall. This shall enable adding of sprinklers in bedrooms if so finally required.
    e. CO_2 -type 5 kg Fire extinguisher adjacent to staircase gate on each floor.
    f. Addressable Fire Alarm system with voice evacuation (speakers/strobes with sounders only for common areas and not in flats).
    g. Fire telephone jacks shall be provided inside the stair as per CFO noc with minimum 2 no's handsets for development.

Comment [SB1]: R4

3. High-Rise (70 m+ to 150 m ground):

    a. No materials with fire rating < 1 hour to be used in the access path from unit to staircase. Unit Main door and Staircase doors to have 2 hour fire rating with smoke seal and other wood to be avoided in lobby design. If the access

path from unit to staircase is sprinkled, requirement will only be limited to unit main door and staircase door having 2 hour fire rating with smoke seal – no other limitation on use of any material in the lobby.

b. Further, doors to meter room and electrical duct (if opening into a fire escape staircase or passage thereto) should have a 2 hour fire rating with smoke seal.
c. Fire hose cabinet with 30 m coverage in/near fire staircase.
d. Sprinkler in lift lobby (from unit upto fire staircase).
e. Sprinkler in all major habitable rooms (living/dining, bedrooms, kitchen) of each residential unit. If non-residential unit, provide as per NBC requirements. The sprinkler pipe is to be painted same colour as the walls of the room and the pipe is to be run along the ceiling-wall junction so that it is as inconspicuous as possible. Bulkhead is to be used to camouflage the sprinkler pipe only if Designer apartment or non-bare shell Hi-end / Luxury residential. If bulkhead is already in the unit due to some other purpose (eg. DB cable), same can be used for sprinkler pipe also (subject to feasibility) – however, the bulkhead length shouldn't be further increased for purposes of sprinkler pipe.

Comment [SB2]: R4

f. Smoke detector in lift lobby (from unit upto fire staircase).
g. CO_2 -type 5 kg Fire extinguisher adjacent to staircase gate on each floor.
h. Escape stairways will have pressurization provision hooked up to fire alarm system.
i. Addressable Fire Alarm system integrated with voice evacuation and Fire Telephone jack inside the stair as per CFO NOC.

4. Super High-Rise (150 m+ above ground):

a. No materials with fire rating < 1 hour to be used in the access path from unit to staircase. Unit Main door and Staircase doors to have 2 hour fire rating with smoke seal and other wood to be avoided in lobby design. If the access path from unit to staircase is sprinkled, requirement will only be limited to unit main door and staircase door having 2 hour fire rating with smoke seal – no other limitation on use of any material in the lobby.

b. Further, doors to meter room and electrical duct (if opening into a fire escape staircase or passage thereto) should have a 2 hour fire rating with smoke seal.
c. Fire hose cabinet with 30 m coverage in/near fire staircase.
d. Sprinkler in lift lobby (from unit upto staircase).
e. Sprinkler in all major habitable rooms (living/dining, bedrooms, kitchen) of each residential unit. If non-residential unit, provide as per NBC requirements. The sprinkler pipe is to be painted same colour as the walls of the room and the pipe is to be run along the ceiling-wall junction so that it is as inconspicuous as possible. Bulkhead is to be used to camouflage the sprinkler pipe only if Designer apartment or non-bare shell Hi-end / Luxury residential. If bulkhead is already in the unit due to some other purpose (eg. DB cable), same can be used for sprinkler pipe also (subject to feasibility) – however, the bulkhead length shouldn't be further increased for purposes of sprinkler pipe.
f. Smoke detector in lift lobby (from unit upto fire staircase).
g. CO_2 -type 5 kg Fire extinguisher adjacent to staircase gate on each floor.
h. Floor-to-floor fire sealing of all service ducts located inside the building footprint.
i. Escape stairways will have pressurization provision hooked up to fire alarm system.
j. Addressable Fire Alarm system integrated with voice evacuation and Fire Telephone jack inside the stair as per CFO NOC.

Comment [SB3]: R4

5. FF Piping Systems: for material specification, refer MEP Policy – 08.

6. In case where cluster of closely spaced buildings are planned, a common centralized fire fighting system has to be designed rather than a stand-alone system for each building.

7. Fire Doors to staircase to have panic bar only if it is a high end building whose security needs demand a panic bar to preventing opening of fire door. In such cases, the panic bar has to be coupled with an (contact) alarm system which raises alarm/buzzer when the door is kept open for a prolonged duration (> 5 minutes). In

all other cases, a simple hinge mechanism is acceptable for a fire door with the door open able from both sides.

8. Covered Parking Areas:
    a. Sprinklers
    b. Hydrants with 30 m coverage near each exit staircase and then additional hydrants at 30 m distance within the basement.
    c. Fire compartmentalization of max. 10,000 sq. mtrs.
    d. In parking areas with mechanical ventilation, following air-changes per hour are required:
        i. 7.5 – in normal scenario
        ii. 15 – in fire scenario

9. Plant/Service Rooms:
    a. Sprinkler
    b. Heat Detector
    c. Fire Extinguisher
    d. Fire extinguisher outside the plant room – type to be determined depending on the type of fire which is sought to be dealt with.

10. Hybrid Fire Alarm system shall be implemented for residential/government car parking areas (basement/podium) as a cost saving option. For residential development if basement/podium forms integrated part of the building plant then fire alarm loop from the building should be extended to cater the basement/podiums.

11. Fire Alarm and Fire Fighting for office/mall development tenant area's shall be provided as below:

Development	Fire Alarm and VAS provision in units	Fire Fighting Provision in units	Remarks
Excelus/I Think	Control module in each unit looped with the building fire alarm system for detection and annunciation. VAS (speakers/strobe with sounders) to be provided from common area loop	Sprinkler tap off to be provided with isolation valve from the header. Internal distribution of sprinklers and its piping shall be done by tenant	
Mall- Anchor shops/ 3rd party commercial kitchen/Cinema Theatre			
Supremus/Mall - small retail units	Each unit shall be provided with multicriteria detector as per the coverage area. (should be restricted to 3 nos for bigger units)	Inside unit distribution of sprinkler and its piping shall be done as per coverage area.	Each detector shall be left with 1 meter of extra cable to enable tenant to shift locations within the range.

In multi-building projects, it can be assumed that 1/4th of the wings (subject to minimum of 1) shall be on fire simultaneously. (Note: In parking podium/basement, it can be assumed that only one of the zones shall be on fire simultaneously).For any additional requirements as per CFO NOC, analysis to be done of whether such requirements are needed as per international standards and then decision to be made in discussion with Director-Design.

These are to be applied to all buildings where RCC construction has started on/after 1.1.2014. The requirements for sprinklers inside unit are to be implemented for all buildings (or parts thereto) where finishing is not commenced as on 16.6.15.

Comment [SB4]: R4