Annexure: (Specification for fire evacuation lift)

Scope:

"Fire Evacuation Lift" purpose is to provide a facility to assist fire-fighters to move with more ease vertically through a building, and rapid evacuation of occupant in fire emergency in the building having height 70 meters and above. Required lift access at every landing or mid-landing of one of the enclosed staircases of the building and the said staircase shall be protected with smoke check lobby by means of Fire resistance door having 1 hr. fire resistance, so fire-fighter / occupant can access the lift safely

Specification of Fire Evacuation Lift:

1. "Fire Evacuation Lift" shall be provided additionally other than, regular lift/s & Fireman lift/s.

2. Capacity of "Fire Evacuation Lift" shall be minimum of 1020 kg/15 persons (equivalent according to occupancy on each floor, height building & evacuation time) whichever is higher.

3. "Fire Evacuation Lift" shall be terminated on evacuation level (ground floor or podium) where facility of the assembly is available in case of emergency and shall not commute to the basement.

4. "Fire Evacuation Lift" shall be housed in a separate core having smoke check lobby with opening on each floor shall be attached with one of the enclosed staircases and required access to the staircase on each landing through fire resistance door of 2 hrs. Rating. Fire Evacuation Lift shall be provided on every mid-landing of one of the enclosed staircases of the building and the said staircase shall be protected with smoke check lobby by means of Fire resistance door/Fire curtain/Fire resistance Glass having 1 hrs. Fire resistance. Refer attached options for the placement of Fire Evacuation Lift.

5. The arrangements and fire resistance of doors and walls shall be in accordance to national fire regulations.

6. The requirements for fire resistance and equipment are defined in the national fire regulations by the building's:

7. All the requirements pertaining to civil and electrical aspects mentioned in National Building Code for "Fire Lift" shall be applicable for "Fire Evacuation Lift" and shall have 'CE' certification.

8. "Fire Evacuation Lift" lift cabin shall be made of non-combustible material with two hours fire resistance sandwiched panels. Automatic car and landing doors, the door shall be 2 hour fire rated.

9. Vision panel provided shall be of minimum 250 mm x 250 mm size and shall also have two hours fire resistance.

10. "Fire Evacuation Lift" car shall have emergency operation switch which will be only operated by fire brigade personnel. On actuation of this switch, the "Fire Evacuation Lift" will only operate from inside or the emergency external operating panel installed at ground/ evacuation floor. The emergency operation switch shall also be provided in podium 2 / stilt floor lobby.

11. Two-way communication systems shall be provided in "Fire Evacuation Lift" car as well as at every landing level including ground floor lobby.

12. All the electric cables shall be fire retardant with low smoke hazard complying relevant BIS standards.

13. Two Operating console shall be provided one inside the lift and second on the ground floor lobby. The control of the lift can be switched by toggle switch, provided at ground floor lobby.

14. The backup electric supply shall be provided with UPS for at least 15 min and it should be online supported by another regular and alternate emergency supply.UPS shall be with jerk less elevator operation.

15. Separate alternate source of electricity i.e. D.G. Set shall be provided for the "Fire Evacuation Lift" as well as arrangement shall be made to connect the "Fire Evacuation Lift" to the D.G. Set of fire vehicle.

16. "Fire Evacuation Lift" shall have IOT (Internet of Things) based control panel which enable automatic notifications to building security room, register occupant and nearest fire brigade in the event of fire. as per the provisions of the IS – 732(Code of Practice for Electrical Wiring Installations) Also, user and OEM shall able to access real time data like total operating hour, fault history, notifications etc.

17. "Fire Evacuation Lift" core (Lift shaft) shall have minimum internal clear space of 2.3 meter x 2.3 meter. - (Refer Drawing Annexure 'F')

18. The "Fire Evacuation Lift" along with the enclosed staircase shall be marked as "Fire Evacuation Lift/Staircase" at each landing door terminating to the lobby.

19. Lift maintenance shall be carried out authorised Lift Company.

20. The Fire Evacuation Lift cabin & wall enclosing the lift shaft have a fire resistance of not less than 2 hours. Shaft shall be pressurised in event of fire or any emergency. The pressure in Lift shaft shall be maintained not less than 5 mm W.G & 2.5 mm WG for lift lobbies. Lift machine room should preferably be sited at the top of the shaft.

21. The "Fire Evacuation Lift" shall be either Traction/rack & pinion or hoist type. However, the speed of Fire evacuation lift shall be such that it can reach the top floor from ground level within one minute. The construction of Fire evacuation lift shall be as per Schedule of Maharashtra lift rules 1958 & IS14665 & International Standards such As EN81-72

22. Fire Evacuation Lift shall function independently from all other lifts. if install in common lobby.

23. "Fire Evacuation Lift" shall have trap door on roof of the car for emergency evacuation from the car. The portable/rope type ladder shall be provided. - (Refer Drawing Annexure 'F')

External Rescue Procedure

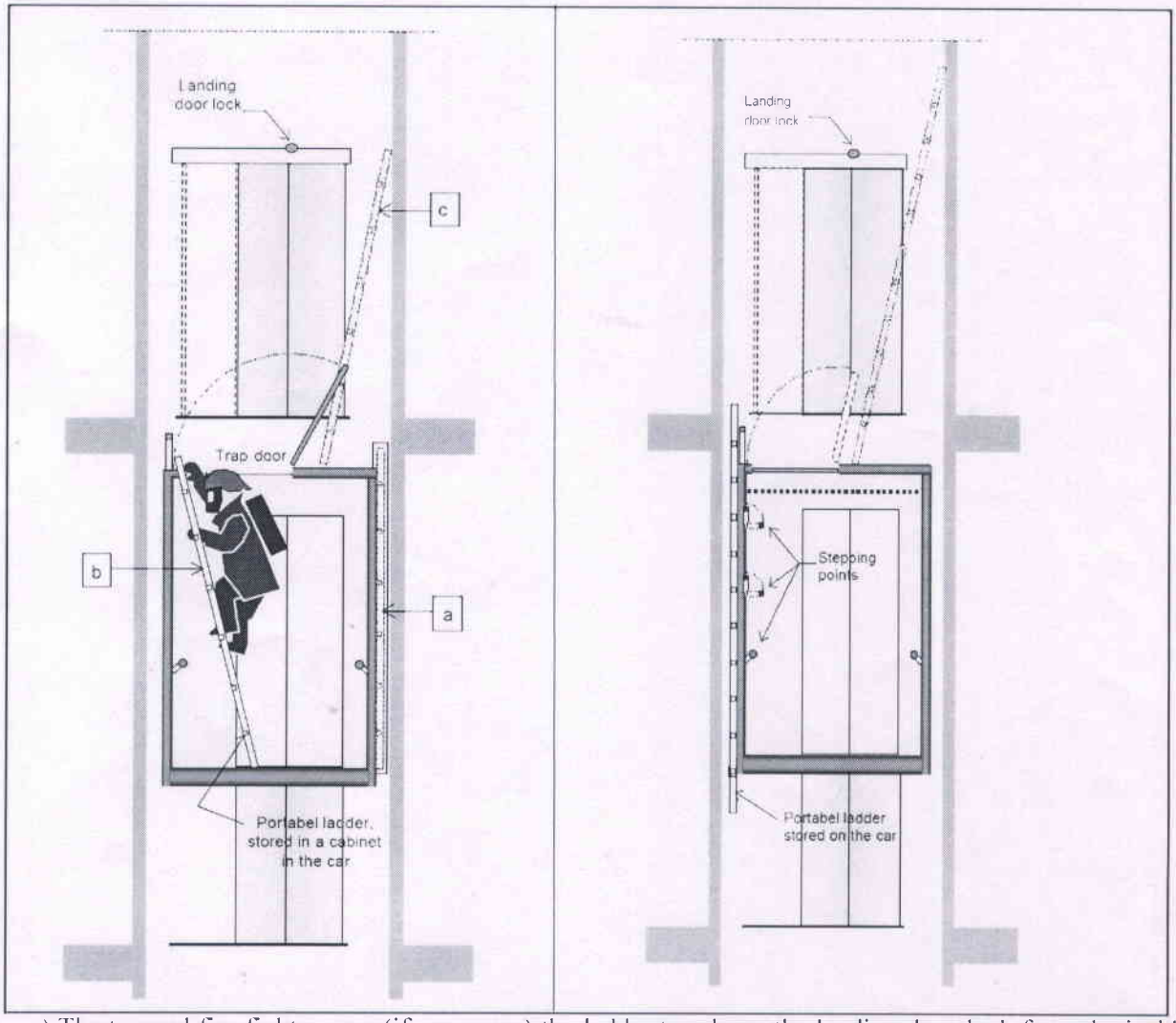
a) The fire-fighter opens the trap door on the car roof, pulls out the ladder stored on the car and places it into the car;

d) The fire-fighter and the trapped person escape through the open landing door, if necessary by using the ladder.

Self-Rescue Procedure

a) The trapped fire-fighter opens the trap door;

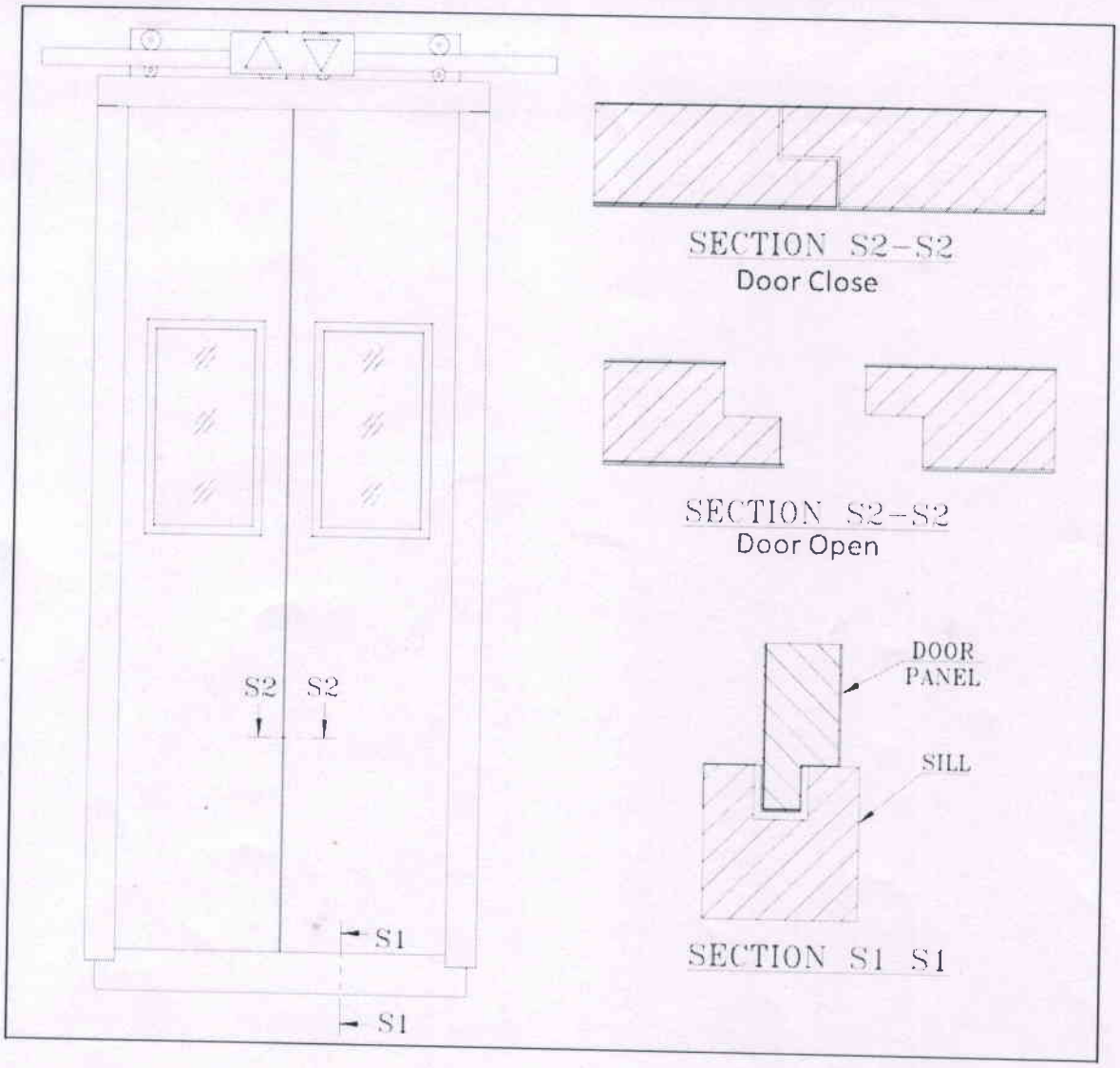
b) The trapped fire-fighter climbs to the car roof, using either stepping points in the car or a ladder stored in a cabinet in the car;



c) The trapped fire-fighter uses (if necessary) the ladder to release the landing door lock from the inside and escapes.

Landing door design to prevent smoke and fire

Door panel to panel joint is overlap designed so that it will not allow fire to transfer thru panel joint & apron shall be provided along the door frame.



Minimum Installation Requirement for Fire Evacuation Lift

1. Required enclosed Lift Shaft with the opening at mid-landing Area (Iflanding it will be considered only post Fire Department & Energy Department approval as special case if building is constructed & occupied between January 2018 to July 2022).

2. Lift lobby shall be protected by means of 2 Hours Fire Rated doors / Fire curtain.

3. Lift shaft Minimum size – 2.3mtr. X 2.3mtr.

4. Lift Pit minimum depth – As per speed of the lift (length and width same as lift shaft size minimum 2.3m x 2.3m)

5. Machine room minimum size - 3m (width) x 4.0m (depth) x 2.8m (height)

6. Lift Landing door size – 1000mm (width) x 2,000mm (height)

Placement /Location Options for Fire Evacuation Lift

1. Mid landing / *(Iflanding it will be considered only post Fire Department & Energy Department approval as special case if building is constructed & occupied between January 2018 to July 2022)*

2. a. Common Lobby with fire curtain / Common Lobby with FRD or
   b. Mid landing with Smoke check lobby
   c. Mid landing without smoke check lobby

3. C shaft with Fire Curtain /FRD

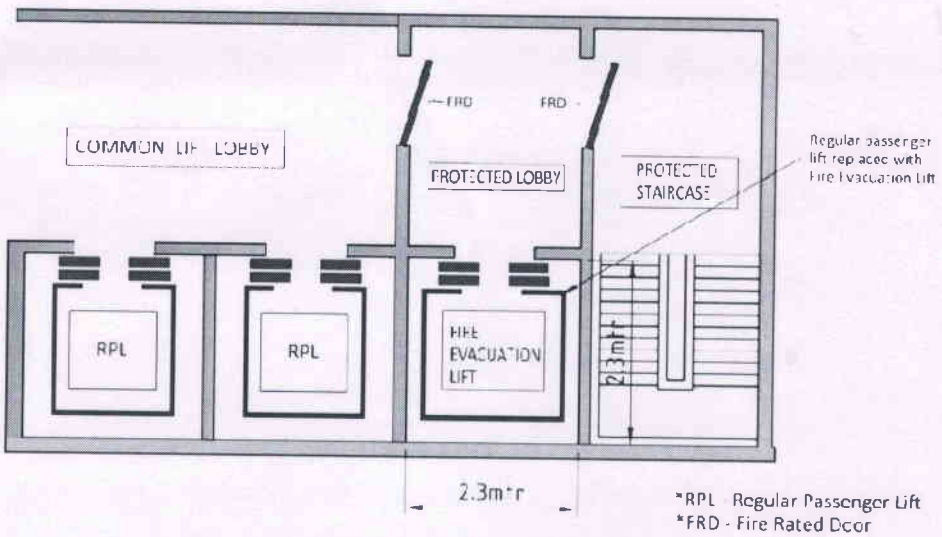
Option 1. High Rise Building 70mtrs & above constructed & occupied by tenants since 2018.
(Refer Drawing Annexure A, B, C, D & E)

Option 2. High Rise Building 70mtrs & above Under Construction with Pre NOC.
(Refer Drawing Annexure A, B, C, D & E)

Option 3. High Rise Building 70mtrs & above Under Design / Planning stage.
(Refer Drawing Annexure D only)

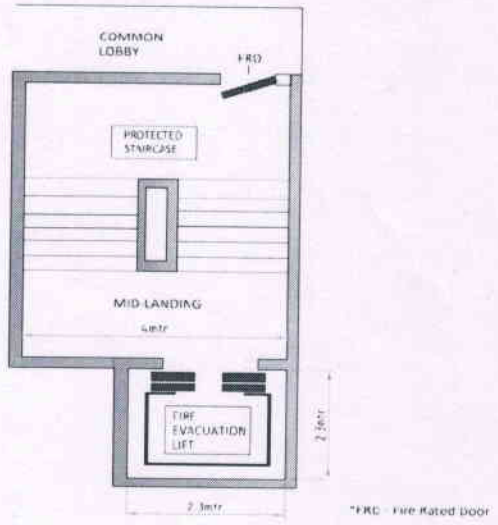
Option 4. Building 15mtrs & above constructed & occupied by tenants since 2018 having turning radius of building less than 09mtrs.
(Refer Drawing Annexure A, B, C, D, E)

Annexure Drawing 'A'

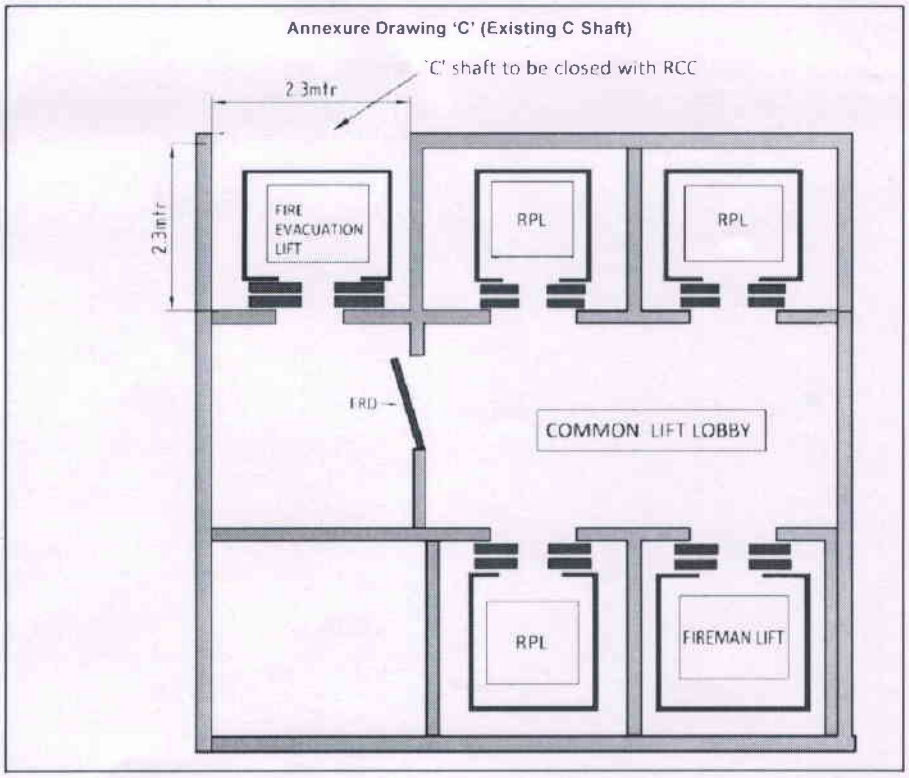


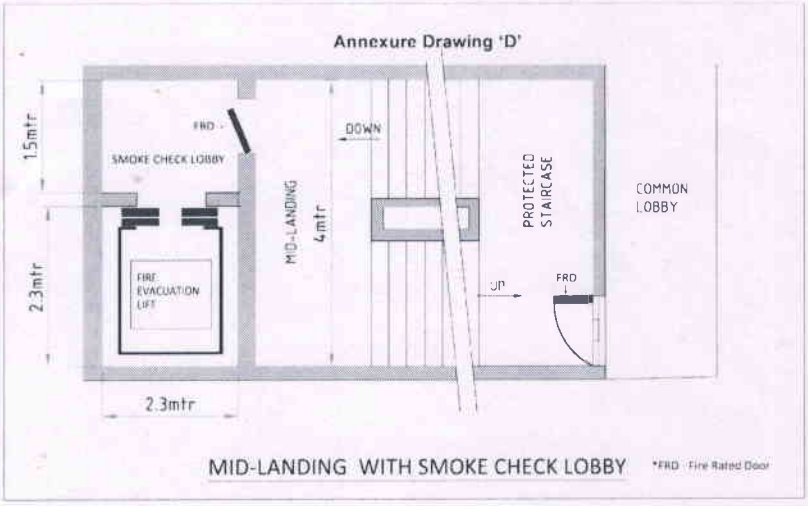
COMMON LOBBY WITH FRD

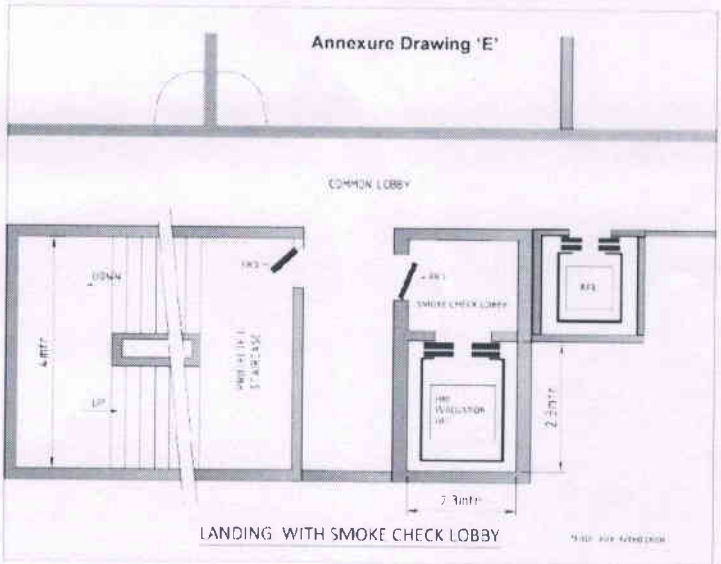
Annexure Drawing 'B'



MID-LANDING WITHOUT SMOKE CHECK LOBBY


Annexure Drawing 'C' (Existing C Shaft)
'C' shaft to be closed with RCC
2.3mtr
2.3mtr
FIRE EVACUATION LIFT
RPL
RPL
FRD
COMMON LIFT LOBBY
RPL
FIREMAN LIFT


Annexure Drawing 'D'
1.5mtr
2.3mtr
FRD
SMOKE CHECK LOBBY
FIRE EVACUATION LIFT
MID-LANDING 4mtr
DOWN
PROTECTED STAIRCASE
COMMON LOBBY
UP
FRD
2.3mtr
MID-LANDING WITH SMOKE CHECK LOBBY
*FRD - Fire Rated Door


Annexure Drawing 'E'
COMMON LOBBY
LANDING WITH SMOKE CHECK LOBBY