All CHS Office Bearers and Residents MUST read

Unraveling Fire Lifts

By TAK Mathews

The recent tragic incident at the Lake Lucerne building, Chandivali that had been preceded by similar tragedies at Mont Blanc, Pedder Road and Tarangan CHS, Thane have lift users across the country worried. The sensational news reports with headlines that refer to "Killer Lifts" with confusing and inconclusive expert opinions havenot provided any clarity. So what is the reality?

"Fire Lift" is short for "Fireman's Lift". This clarification on its own should clarify the doubt that exists amongst users. Fire Lifts or Fireman's Lift, which may be operated as a normal lift during regular times is provided for the *EXCLUSIVE* use of firemen in an emergency.

The National Building Code 2005 (NBC 2005) and the Indian Standards (IS) 14665 defines this requirement. By the definition fire lifts have to necessarily be automatic lifts – *a manual door lift cannot be a fire lift.*

Second points of clarification, *in fire emergency lifts are not to be used by laymen.* The only exception would be when specifically instructed by competent and knowledgeable fire or rescue personnel.

Third point of clarification is that *Fire Lifts are NOT fireproof lifts.* The landing doors of lifts require to be with a 1-hour fire resistance as required by amendment No. 1 of February 2011 and No. 2 of November 2011 to clause 8.3.14b of Part 2 / Section 1 of IS14665 and NBC 2005.Point to be noted is that collapsible gates, and most swing doors by design cannot be fire resistant.

Even the fire resistance of the landing doors does not guarantee that the lift will run without a problem – the fire resistance of the landing doors is effective as long as they are in a closed position. If the lift for some reason opens on the affected floor, the extreme heat could affect the door components and prevent the doors from reclosing. Extreme heat on the floor could also cause the hall buttons to fuse and trigger a false call to the affected floor. *This could have been a compounding reason for the tragic incident at Tarangan CHS in 2009.* Further if the water from the sprinklers or the fire fighting operation finds its way into the hoist way, there is a possibility of electrical short circuits. These short circuits could lead to a malfunction including a worse case situation where the lifts run with the doors open.

Fourth point of clarification is that in a fire emergency, *all lifts are to be grounded on the evacuation floor with the doors open.* This is to be achieved by toggling the fireman switch either manually or vide a BMS input. After the grounding, the firemen may use the designated fire lift. This is elaborated in NBC 2005 and IS14665.

An underlying issue regarding clarification 3 and 4 is that lifts installed before NBC 2005 and the IS amendment would most likely not be in adherence to the requirements. Even if the lifts are after this period there is no guarantee that the lifts will be according to norms as many suppliers and buyers have been and continue to be ignorant of the requirements. This is a fact that has been witnessed during lift audits conducted around the country by TAK Consulting. The supplier as well as building owner has a responsibility to verify the norms that their lifts adhere to the requirements laid out in NBC 2005 and IS14665.

Fifth point of clarification, *any lift requires power supply to operate.* Lifts are not expected to move by gravity without control – *even the most basic control will require power input.* If lifts were to be allowed to move on its own accord with gravity, the counter weighted lifts could move upwards when the car is only partially loaded or even dangerously move with the doors open. While some lifts are provided with automatic rescue devices to execute a rescue in a power failure, in an emergency this is not without risk as there is a possibility that the rescue might be on to an affected floor. A reliable power source is prerequisite to ensure availability of the lift. NBC 2005 mandates that the fire lift is to have an alternate power source like a generator.

The question that does arise is what happens for occupants who are disabled or for super tall buildings where walking down stairs is not practical. It is a fact that Burj Khalifa has been designed around a fire fighting and evacuation process that involves using of the lifts. The difference between the lifts at Burj Khalifa and lifts as per NBC 2005 and IS14665 is not significant.

What is different at the Burj is that the whole building has been designed around the evacuation plan. The lifts are in fire resisting shafts and enclosed in fire resistant and protected lift lobbies in such a way that the lifts are significantly protected against water, fire and smoke. The lift lobbies are large enough to accommodate waiting people as well as have emergency communication. The lobbies and shafts too have closed circuit TV cameras which give the emergency crew real time understanding of the status of the lobbies as well as shafts. Therefore for a lifts to be really dependable for firefighting or evacuation purposes they need to be enclosed in fire resisting shafts and enclosed in fire resisting and protected lift lobbies.

So how do you approach lifts in case of a fire emergency? *Resist the temptation to use the lifts without clear direction from competent rescue personnel.* The immediate step is to toggle the fireman switch and ensure that all the lifts are grounded on the evacuation floor with the doors open. **DO NOT disconnect the power to the lifts** unless it is verified that all lifts are on the evacuation floor with the doors open.

For firemen the recommended operational procedure for lift use is

1. Use the stairs
a. For low rise buildings
b. If the fire is very heavy
c. If the fire is in the machine room or shaft
2. Testify the lifts adhere to the NBC 2005 norms. In case of doubt use the stairs
3. Inspect the hoist way for water, fire or smoke
4. Ensure that the power disconnect is in the team's control
5. Ensure presence of a back up team with means of communication with the lift
6. Do not overload the lift
7. Designate and assign a member to be the lift operator who clearly understands the operating process.
8. Never take a lift to the basements or parking floors *(To enhance the safety of the main lifts to the main part of the building should serve only floors above the main lobby (evacuation floor)* and avoid the parking floors. Separate lifts should be provided for access to the basement and parking floors)
9. Never take a lift to directly to the affected floor. The lift should be stopped at least 2 floors below the affected floor.

Prevention is better than cure –it is essential that there is constant vigil to identify risks in your building and take remedial measures. Even then there is a possibility that things could go wrong and that is where preparedness comes in. To this end it is essential that **periodic drills** be carried out so that in an emergency each individual knows what is to be done. *Safety and preparedness is everybody's responsibility.*

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