

“GROUND REALITIES OF FIRE-FIGHTING AND ADEQUACIES OF CURRENT CODES/STANDARDS”

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TRADITIONAL V/s MODERN TYPE OF CONSTRUCTION

▣ TRADITIONAL

- ▣ Walls having glass windows at exterior side
- ▣ Windows either hinged or sliding having large opening and mostly accessible from inside as well as outside

▣ MODERN

- ▣ Walls made of entire glass panels
- ▣ Windows hinged having very little opening and may or may not be accessible from inside or outside.

PRODUCTS OF FIRE WHICH CAUSE SPREAD OF FIRE

- ▣ SMOKE - BEING LIGHTER THAN AIR, ALWAYS TRAVELS IN UPWARD DIRECTION
- ▣ FLAME - ALWAYS TRAVELS IN UPWARD DIRECTION
- ▣ HEAT - SPREADS ALONG WITH SMOKE AND FLAME



GLASS FACADE

LOTUS PARK ANDHERI FIRE



ESSENTIAL REQUIREMENTS IN CASE OF FIRE

- ▣ OPENING FOR RESCUE AS WELL AS ACCESS FROM EXTERIOR. (NEAR FLOORING LEVEL)
- ▣ VENTILATION FOR EGRESS OF SMOKE (AT CEILING / FALSE CEILING LEVEL)
- ▣ RESTRICT SPREAD OF SMOKE FROM ONE FLOOR / COMPARTMENT TO ANOTHER
- ▣ RESTRICT VERTICAL SPREAD OF FLAME / FIRE

- ▣ An Opening to the glass façade of min. width 1.5 m and height 1.5 m shall be provided at every floor at a level of 1.2 m from the flooring at every floor level facing compulsory open space as well as on road side. Minimum one such opening shall be provided at the interval of every 15 m. - Mechanism of Opening: - The openable glass panel shall be either left or right hinged to facilitate approach of the rescue cage / ladder. Similarly, this portion shall have manual opening mechanism from inside as well as outside. Such openable glass panels shall be marked conspicuously so as to easily identify the openable panel from outside.
- ▣ Distance between the external wall (glass / brick) and glass façade shall not be more than 300 mm.
- ▣ The smoke seals / barriers between building wall and façade shall be provided at every floor level in the form of non-combustible material / vermiculate cement.
- ▣ Glass faced blocking the area of staircase, lift lobby and corridor shall be kept openable. Pressurized system of the staircase / lobby shall be synchronized with opening mechanism.
- ▣ The glazing used for the façade shall be of toughened (tempered) safety glass as per I.S. 2553, Part I or laminated safety glass as per I.S. 2553 – Part I, satisfying stability criteria.
- ▣ Automatic Dry type water curtain system shall be provided at every floor level from inside of the façade.
- ▣ Openable vent of 600 mm height to be installed below ceiling level or false ceiling level (if provided). - The openable vent of minimum 2.5% of the floor area shall be provided. It shall be of min 600 mm depth below ceiling / false ceiling or full length on the periphery of the façade whichever is less. - Openable mechanical devices for the said vent shall be located at 1.2 m height from the flooring level. The Openable vent shall also be integrated with automatic Smoke Detection system.

OR

Alternate vertical glass panels of the façade shall be openable type with the mechanism mentioned above in order to ventilate the smoke.

- ▣ Refuge areas covered with the glass façade shall have all the panels openable (either left or right hinged) both from inside as well as outside.

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ESSENTIAL FOR RESCUE

Glass Glazing



- ▣ Distance between the external wall (glass / brick) and glass façade shall not be more than 300 mm.

- ▣ The smoke seals / barriers between building wall and façade shall be provided at every floor level in the form of non-combustible material / vermiculate cement.

ESSENTIAL TO RESTRICT SPREAD OF SMOKE
FROM ONE FLOOR TO ANOTHER

- ▣ Glass faced blocking the area of staircase, lift lobby and corridor shall be kept openable. Pressurized system of the staircase / lobby shall be synchronized with opening mechanism.

**ESCAPE ROUTE MUST BE PROTECTED FROM
PRODUCTS OF FIRE**

- ▣ The glazing used for the façade shall be of toughened (tempered) safety glass as per I.S. 2553, Part I or laminated safety glass as per I.S. 2553 – Part I, satisfying stability criteria.

ESSENTIAL TO AVOID ACCIDENTS /
INJURIES

- ▣ Automatic Dry type water curtain system shall be provided at every floor level from inside of the façade.

ESSENTIAL TO RESTRICT VERRTICAL
SPREAD OF FLAME / FIRE

- ▣ Openable vent of 600 mm height to be installed below ceiling level or false ceiling level (if provided). - The openable vent of minimum 2.5% of the floor area shall be provided. It shall be of min 600 mm depth below ceiling / false ceiling or full length on the periphery of the façade whichever is less. - Openable mechanical devices for the said vent shall be located at 1.2 m height from the flooring level. The Openable vent shall also be integrated with automatic Smoke Detection system.

OR

Alternate vertical glass panels of the façade shall be openable type with the mechanism mentioned above in order to ventilate the smoke.

ESSENTIAL FOR VENTILATION

Refuge areas covered with the glass façade shall have all the panels openable (either left or right hinged) both from inside as well as outside.

ESSENTIAL FOR RESCUE

OPENABLE PANELS - ACTIVATION OF SMOKE DETECTOR



OPENABLE PANELS - ACTIVATION WITH EMERGENCY SWITCH



OPENABLE PANELS - ACTIVATION WITH MANUAL SWITCH

