

GRAMS"STAPATHI"

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GOVERNMENT OF ANDHRA PRADESH

From  
The Director of Town and  
Country Planning,  
Govt. of Andhra Pradesh,  
640 - A.C. Guards  
**HYDERABAD.**

To  
The Principal Secretary to Govt.  
Municipal Administration and Urban  
Development Department,  
Govt. of Andhra Pradesh,  
**HYDERABAD.**

Lr.Roc.No.7049/2008/A, Dt. 20-08-2008

Sir

Sub: Town Planning – Request for support on ensuring safe use of glass in buildings through appropriate Building bye-laws- Remarks submitted- Regarding.

Ref: 1. Govt. Memo No.7659/M1/2008, Dt:06-05-2008  
2. Lr.Roc.No.5689/2005/11, Dt.16-04-2008 of the Director of Town and Country Planning.

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With reference to the Government memo 1<sup>st</sup> cited it is to submit that in the modern lifestyle, increased Glass use in buildings offers many advantages. Those who spend more time indoors have intuitively understood benefits of improved daylight and vision on human psychology and health, and recent research findings underscore these indisputably. However, this increased use of glass in Indian buildings is not without risks. Wrong selection of glass type is widespread and does result in increased heat gain/loss in buildings and the higher risk of injuries to humans.

Safety glazing (glass) is required by the International Residential Code (IRC) in a number of locations and is intended to reduce the potential for injury in the event of accidental impact with the glass. The placement of safety glass is in areas that are more likely for people to fall into, on, or through. Examples include glass in or near to doorways, bathtubs, sliding doors, and near the floor.

The two most common types of safety glazing are tempered and laminated. Tempered is the most common type of safety glass used in residential applications because it far less expensive than laminated glass. It has a higher tolerance to impact without breaking. Further, when tempered glass does break, the entire pane of glass crumbles into large granules that resemble large pieces of rock salt. Crumbled glass is less likely to cause serious injury than the shards that result from broken annealed glass.

Safety glazing is required, where people are at risk from colliding with glass windows etc, where the glass should be robust enough not to break or be constructed of safety glass, or have suitable guarding. Large sheets of glazing needs to be made obvious so that people do not collide with it.

Confederation of Construction Products and Services (CCPS), a non profit organization took the lead and has prepared the "Guidelines on use of Glass in Buildings Part A: Human Safety". The government organizations like CPWD, NBCC were also involved in the consensus process while preparation of the guidelines. The CCPS may be advised to take steps to include these guidelines in the NBCC for better adoption.

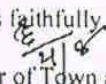
In this regard, the Committee constituted for the purpose of preparation of Hand Book of Revision of Building Byelaws, while submitting its recommendations vide Lt.Roc.No.5689/2005/11, Dt.16-04-2008 of the Director of Town and Country Planning, also submitted a set of guidelines for usage of glass in Buildings, to the Government.

It is essential to put certain conditions on the use of Glass in buildings to ensure human safety. The following conditions may be imposed.

- Safety glazing material shall be used where
  - any glazing is within 1.5 metre above the floor level of building,
  - there is danger of falling infill glass materials from overhead glazing
  - there is danger of falling due to a change in floor level and in case of balustrades, stairs and floors.
- Necessary precautions shall be taken to enhance a person's awareness of the presence of glass by making glass visible and to minimize manual handling of large pieces of glass during installation.
- Any glass with Sill height  $\geq 0.75\text{m}$  or with Residual Protection type of glass shall be used as vertical walls.
- Safety glass of no risk of fall (Falling height  $\leq 1.5\text{m}$ ) and Sill height  $< 0.75\text{m}$  shall be used as vertical walls.
- Safety glass of risk of fall (Falling height  $\geq 1.5\text{m}$ ) and Sill height  $< 0.75\text{m}$  shall be used as vertical walls.
- Laminated Safety glass shall be used in Horizontal or sloped glazing and as a balustrade, parapet or a railing.
- Toughened(Tempered) Glass or Laminated safety Glass, subject to meeting the Definitions and Test standards as outlined in the IS 2553 (Part 1 ) and the Guidelines on use of Glass in Buildings Part A: Human Safety" prepared by CCPS, shall be used in the building.
- Windows, skylights and ventilators over two meters high, shall have controls, limiters and safe access for cleaning on both sides.
- In case of external laminated glass facades, open able portions shall be left at regular distances as required for fire fighting and smoke exhaust
- Laminated glass with both glass panes toughened will not classify as safety glass.
- Clear glass panels capable of being mistaken for an unimpeded path of travel shall be marked to make them visible by incorporating manifestation as mentioned in the CCPS guidelines.
- All Safety Glass shall be ISI marked along with the name or logo to identify the manufacturer of the safety glass.

It is also essential to have a way to ensure that the Glass used in a Building is of the quality as required by the International Residential Code (IRC). Hence, in case of all commercial complexes, Multiplexes and Multistoried buildings, it is desirable to make the building owner and the Engineer/Architect responsible for ensuring the use of glass complies with the standards set by the International Residential Code (IRC), and to insist for a joint certification of the building owner and the Engineer/Architect to the effect that the usage of Glass in the Building is done properly according to the standards of the International Residential Code (IRC) and Guidelines on use of Glass in Buildings Part A: Human Safety recommended by Confederation of Construction Products and Services (CCPS).

I enclose here with a copy of Guidelines on use of Glass in Buildings Part A: Human Safety and request the Government for further course of action.

Yours faithfully,  
  
Director of Town and  
Country Planning