



Creating A Hotbed of Controversy

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[Constructive criticism is the password for progress in our industry. While the motion picture, "The Towering Inferno," does offer some constructive criticism, experienced wall and ceiling contractors have been quick to detect its errors-and the need to defend the industry against unjust criticism of high-rise building technology and safety. Taken as pure entertainment, "The Towering Inferno" represents movie making at its best. But creative license does not permit gross exaggeration of facts to achieve box office results. The following article identifies the errors and will aid members of high-rise construction teams in seeing why the movie should not be taken at face value.]

Hollywood's newest motion picture spectacular, "The Towering Inferno," produced jointly by 20th Century-Fox and Warner Brothers, was intended to point out the dangers of fires in high-rise buildings and show what should be done about them.

In many cases, the hazards are valid and corrective action is clearly needed. However, the movie-makers have outdone themselves. In their attempt to produce a fingernail-biting action drama, the producers may frighten many people who work or live in high-rise buildings. Warnings are fine, but if occupants are convinced

they're in danger in a minor high-rise fire, experts say they may panic and create a serious disaster.

Details Overlooked

Equally serious are the implications against existing buildings and members of high-rise construction teams. The producers apparently made a sincere effort to become experts in fire safety so they could be accurate, but they overlooked many details and considerations that are learned only through years of close association with fire-safety construction and related problems.

Many of the events of the movie

provide no explanation for their occurrence. Some may be explained by referring to the two books on which the movie is based, "The Glass Inferno" and "The Tower", but some are undoubtedly added or exaggerated for screen effect. For instance, twenty or more explosions, ripping out the exterior walls, stairwells and service core of the building are shown in the movie, but not explained. In "The Tower" only one explosion, caused by a bomb, occurred. In "The Glass Inferno" three explosions are mentioned (excluding the one that put out the fire): the first was caused by paints and solvents in a storeroom, the second a bursting steam line caused by the "shattering" of a masonry core wall adjoining the stockroom, and the third resulting from a gas pipe bursting at the same time as the steam line.

In "The Glass Inferno," the interior core walls are constructed from PYROBAR Gypsum Tile, apparently plastered. In the movie, the exterior core wall is obviously reinforced concrete (see page 12). Because of the low

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Effective fire protection materials, such as Thermafiber Safing, left, and Thermafiber Curtain Wall Insulation, right, as installed in Sears Tower, Chicago, virtually eliminate fire spread as described in new movie.

TOWERING INFERNO

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local codes are quite adequate, but others allow the use of less than desirable materials or fire ratings than needed to provide adequate life safety. Also, who is responsible for inspecting the construction of a building to see that the right materials are used and put together properly? The architect, the contractor, the building inspector and the fire department all are involved, but as shown in the movie, the responsibilities are not always clear.

Architect Inspection?

Since he is closest to the design, perhaps it should be mandatory that the architect inspect the

building. And it goes without saying that the building inspectors must perform properly to see that the building meets code. In one of the books and the movie, the architect was sent away while shenanigans in material substitution were going on. The architect should not only approve material substitutions, but he should also check contractors for correct installations.

The irony of the movie and the books is that they pick on one of the safest of all types of construction: the high-rise building. Little mention is made of the high loss of life in movie theater, night club and low-rise residential fires.

The entertainment value of the books and movie are high, but the facts are wrong and the danger of spreading unjustified fear is too great. High-rise construction in most countries, particularly in the United States and Canada, is of such high quality that fires are almost always contained at their point of origin until fire-fighting equipment can arrive to extinguish them. Fires in high-rise buildings can and do occur, but factually, "The Towering Inferno" is only a figment of a wild imagination, and technically, is towering nonsense.

Wildly improbable chain of events caused unlikely fire to sweep through imaginary 136 story building in "The Towering Inferno."



structural strength of gypsum tile, it is possible that an explosion could shatter the interior core wall, pipe shaft walls and interior stairwell wall. But the exterior concrete wall, reinforced with steel rods, should hold up, aided by the three interior walls absorbing much of the force of the explosions.

However, it is unlikely that PYROBAR Tile would be used here. Both books and the movie indicate that the building is new and the most modern design techniques were utilized. That means that the core walls should be either a plaster or drywall system supported on steel framing, concrete block or poured concrete, since PYROBAR went out of general use for core partitions about five years ago. Any of the modern systems would resist an explosion better than the gypsum tile.

Although the movie states that the sprinkler system failed, both

books give the impression that sprinkler systems are a panacea for fire dangers if used throughout a building. It should be remembered that while such systems are a welcome addition, they sometimes fail because of vandalism, improper maintenance, closed valves or broken water pipes. It is

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essential that codes not be weakened to allow sprinkler systems to be substituted for fire-rated systems that contain as well as prevent the spread of fire.

References to melting and burning plaster or drywall in both books are totally erroneous. Plaster and drywall will calcine and give off steam if subjected to

intense heat, and the materials will spall and eventually fall apart, but neither plaster nor drywall will burn or contribute to a fire to any degree. In fact, the books and movie seem to forget to mention that core walls and many partitions are “fire-rated,” which means they can contain the fire for one, two and sometimes three or four hours, depending on the rating they provide.

A number of other errors were made in the books and/or movie. For one thing, fire is not likely to spread in an elevator or mechanical shaft. Fire-rated partitions in these areas resist passage of flame, and inside a shaft there is almost nothing to burn. Also, high-rise apartment partitions are not constructed with wood studs and plywood-noncombustible materials almost always are used. Also, fire cannot easily spread from apartment to apartment in a high-rise building, since a minimum 1-hr. fire rating is required between units. It is unheard of for manufacturing or warehousing facilities to be located in high-rise buildings. While there might be some flammable furnishings and product samples in the building, it is highly unlikely that the amount of flammable material described in the books and movie would be present.

Good Points Made

There are, however, some good points made in the movie. One of them concerns avenues for spread of fire: gaps between floor slab and exterior curtain wall, piping and duct holes cut through fire-rated floors and cutouts in fire-rated partitions. While these openings will not allow “explosive expansion” of the fire, they are avenues for a gradual and dangerous spread of fire and smoke. Most building codes require such openings to be fire-stopped, but often improper materials are allowed for this use. Recent breakthroughs in development of high-melt-point insulations have made a new inexpensive material available for safing off all types of openings.

Other areas that require attention are codes and inspections. The model building codes and many

Explosions described in books and movie would not destroy heavy reinforced concrete wall.

