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Designing to Save Lives and Protect Property

The PCI Central Region works with architects and engineers to promote an understanding of building materials, active and passive fire suppression systems, and balanced design concepts. Our focus is to provide design solutions that represent the best line of defense in providing structures that resist fire, save lives, and provide lasting value.

Precast concrete construction provides long term savings in maintenance and insurance costs and significantly reduces potential costs for fire damage, loss of life and lawsuits. Compliance with building codes provides only the minimum level necessary to pass inspection. It does not ensure lives will be saved when fire breaks out.

Local building officials, who are responsible for community building standards that adequately protect citizens, can insist on a higher building standard than the minimums allowed. The PCI Central Region is a resource to local building code officials by providing technical fire safety information on precast concrete.

There are several key areas of code compliance that, when examined more closely, can educate owners and designers to select truly effective fire protection at an economical cost.

Minimum Standards: Building codes outline minimum fire ratings required for various applications, including fire resistance. But a fire rating is not the same as fire safety. And not all materials with the same fire rating will perform the same.

Building Materials: Wood and steel perform poorly in fire scenarios. Both must be treated, coated or covered, to meet fire requirements. Experience shows that during fires, these coatings and coverings can blow or fall off the members they are meant to protect. This can result in structural failure of the members or, in the extreme case, total collapse of the building.

Sprinklers: This approach creates larger spaces in which fire is more difficult to contain and in which large amounts of fuel and oxygen can expand a fire rapidly, outdistancing the ability of sprinklers to prevent fires from spreading.

Balanced Design Approach: A design approach that stresses compartmentation offers a more fundamental method to protect lives and property. Compartmentation uses passive noncombustible floors and walls, such as precast concrete, to construct sections of the building as separate modules that confine fire to a specific area.