

Shedding Light on Vision Areas in Fire Doors and Paths of Egress

Ways to use fire-rated glazing in compliance with 2012 IBC and ADA requirements

What's an easy way to save money and create safer schools? Just add glass. The challenge is finding glass that provides the most benefits *and* meets code. Tapping into daylight through interior windows, corridor skylights, and vision panels in and around doors contributes to student safety and energy efficiency. Studies also correlate natural lighting to increased student performance.

The new 2012 IBC states that fire protection glazing, such as wired glass and ceramics, used in vision panels in 60 and 90 minute temperature rise doors located in exit enclosures and exit passageways, can be no larger than 100 square inches, whether or not the building is fully sprinklered. In addition, any vision panel needs to be within 43 inches of the floor to comply with the Americans with Disability Act (ADA.)

New 2012 IBC works to protect people from the dangers of radiant heat transmission

In the 2009 Code Development Cycle, SAFTI *FIRST* was able to successfully pass a code change that that removed the sprinkler tradeoff for fire rated glazing in doors located in exit enclosures and exit passageways. The new 2012 IBC Section 715.4.4.1 will read as follows with the "exception" paragraph removed (~~stricken~~):

715.4.4.1 Glazing In doors. Fire protection rated glazing in excess of 100 sq inches (0.065 square inches) is not permitted. Fire resistance rated glazing in excess of 100 sq inches (0.065msquare inches) shall be permitted in fire door assemblies when tested as components of the door assemblies, and not as glass lights, and shall have the maximum end temperature rise of 450 degrees F (250 degrees C) in accordance with 715.4.4.

~~**Exception:** The maximum transmitted temperature end rise is not required in buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.~~

The change is important because neither sprinklers nor fire protection glazing can fully protect against the spread of fire caused by the unrestricted radiant heat.

NFPA 80 (2007) Annex 1 explains why fire resistive glazing in fire doors is important:

"Traditional glazing materials have been prohibited from being used in fire windows in exit stair enclosures because of the concern for radiant heat transfer. Recently, the model building codes also incorporated requirements for limiting the temperature rise on the unexposed face of fire doors opening into exit stair enclosures in order to address the problem of heat transfer (both conducted and reradiated) that could expose evacuating occupants passing doors at each landing. Therefore, caution should be exercised when considering glazing materials with fire protection ratings of 60 minutes or more in such applications, since they can transmit excessive radiant heat into the exit stair enclosure. However, glazing materials with fire resistance ratings are suitable for such situations, since they have been tested to limit radiant heat transfer."



“The presence of sprinklers isn’t enough insurance when it comes to saving lives. We need balanced fire protection. Fire-rated glass plays an important role in providing both active and passive protection. Fire resistive glass products can provide the same protection as a solid wall,” said William F. O’Keeffe of SAFTI *FIRST*, in testimony before the International Code Council. The code council agreed with Mr. O’Keeffe and changed the code.

ADA requirements seek accessible vision areas in doors

ADA section 404.2.11 requires that at least one of the vision panels in a door and sidelites adjacent to a door be no more than 43 inches (1090 mm) above the floor line to provide visibility and safe access for all. Vision panels exceeding 100 square inches in 60 and 90 minute doors require fire resistive glazing. The resistive glass requirement applies to sidelites and transoms as well. Wired glass and ceramic products are fire protective rather than fire resistive products. This means that they fail to block the transmission of radiant heat, so their size in vision areas must be limited. In order to have vision areas in doors and sidelites in exit enclosures and exit passageways large enough to be within 43 inches of the floor line, the 2012 IBC requires this glazing to be fire resistive rather than fire protective.

Warren County Career Center, Lebanon, Ohio. This door assembly (sidelites, transoms, doors) meets both the new 2012 IBC and ADA requirements for vision areas located in exit enclosures and exit passageways. These large fire resistive vision areas are made possible by the application of SuperLite II-XL 60 in HMTR Doors and SuperLite II-XL 60 in GPX framing in sidelites.

