



PROJECT: Evergreen Aviation & Space Museum, McMinnville, Ore.
PRODUCT: Technical Glass Products' Pilkington Pyrostop
Transparent Wall Panels
USE: TGP applied at the home of the world-famous Spruce Goose flying boat airplane to create a fire-resistant stairwell enclosure
CONTACT: fireglass.com, Circle 522
PHOTO: Pete Eckert



PROJECT: New York's Tommy Hilfiger store
PRODUCT: TGP's Pilkington Pyrostop
USE: Needed fire-rated glazing in place of a block or concrete wall to provide views of its merchandise from a fire-rated exit stairway.
CONTACT: fireglass.com, Circle 521



PROJECT: Washington State Legislature
PRODUCT: Bronze-clad TGP Fireframes
Heat Barrier Series glass doorframes
USE: To retain the character of the building, bronze-clad TGP Fireframes Heat Barrier Series glass doorframes and sidelights with fire-resistant glass were designed for the stairwells.
CONTACT: fireglass.com, Circle 520



FIRE- RATED GLASS

Fire-rated transparent floor systems, walls and stairwells are among some of the exciting new developments in the fire-rated glass industry.

Back in the old days when fire-rated windows and frames were required, an architecturally stunning, daylighted space was completely out of the question. Only available in very small panes with vertical and horizontal mullions, design freedom was extremely limited. But today, that's completely changed.

Now, according to M. Scott Foote, consultant, InterEdge Technologies, Sausalito, Calif., the ability to butt glaze fire-rated glazing as a transparent wall provides the missing element to design flexibility. For example, applications for InterEdge's expansive Vision 60 system are virtually unlimited, be it large atrium areas, conference rooms, laboratories or stairwell enclosures.

Case in point, a new biotechnology research facility at the University of Wisconsin-Madison is capitalizing on such butt-glazed systems in large panels, which will enable greater visibility and collaboration amongst scientists and advanced research viewing by visitors. Or take the Fort Drum Battle Simulation Center in Fort Drum, N.Y. Large panes of fire-rated glass from Safti First help create an attractive viewing area with smooth transitions along the corners of the fire-rated frames.

On a similar note, Jeff Razwick, vice president of business development, Technical Glass Products, Kirkland, Wash., says style and versatility are very big driving factors for fire-safety product offerings these days. "Whether it's via specialized glazing systems or more slender fire-rated glass frames, glazing suppliers are very focused on creating visually stimulating spaces."

BY BARBARA HORWITZ-BENNETT, contributing writer

PROJECT: California Endowment Building, Los Angeles
PRODUCT: SAFTI FIRST's SuperLite II-XL120 in GPX framing
USE: Tint free and optically clear, it blocks radiant heat transfer to meet ASTM E119 requirements
CONTACT: safti.com, Circle 519





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GLAZERS ARE FOCUSING ON CREATING VISUALLY STIMULATING SPACES.

PROJECT: Main lobby at Mills College Lorry L. Lokey Graduate School of Business in Oakland, Calif.
PRODUCT: InterEdge Technologies' Vision-60 System
USE: To help create a dramatic effect for this breakout room that appears to hang in midair as it extends over the lobby.
CONTACT: firesafe-glass.com, Circle 518
PHOTO: majedphoto.com

Furthermore, specifiers are getting away from the notion that fire-rated materials negatively affect the overall building aesthetic. One example is the recent introduction of fire-rated glass floor systems. While opaque systems such as concrete or steel used to be the only fire-rated option, the design possibilities with glass floors and greater ability to bring more natural light deep into buildings are major achievements.

FIRE-RATED TRANSPARENT STAIRWELLS

Yet another major advance has been the application of transparent wall systems to stairwells. "Before fire-rated glazing, stairwells would have to use rated wall construction material such as sheet rock or brick to meet the fire-rated requirement for that application," explains Diana San Diego, director of marketing, Safti First, San Francisco.

The result, she says, was a closed-off system with zero visibility into interior spaces. Enclosed stairwells are stifling and claustrophobic, adds Foote, and danger can lurk around every corner. On the contrary, transparent

stairwells not only introduce an attractive space that better integrates with the building design, but they also offer transparency, vision and added security, says San Diego.

From an emergency egress standpoint, the transparency brings "natural or passive light into stairwells, which is a safety feature when the power is down and people must safely leave a building," points out Bret E. Penrod, general manager, Pilkington Fire Protection Glass, Toledo, Ohio.

Beyond these benefits, these systems still have the essential fire protection qualities and, in fact, new fire-rated glass wall systems are actually superior to traditional fire-rated materials in that they protect occupants from the spread of smoke and flames, in addition to the intense heat of structural fires. Such radiant heat protection, unique to fire-rated glass, enables a situation where a fire could be raging on one side, yet the opposite side of the glass remains cool to the touch, says Razwick. With growing industry awareness of the dangers posed by radiant heat, San Diego has actually seen more interest in radiant-heat-resistant products.

PROJECT: Walt Disney World Resort, Orlando
PRODUCT: Safti First's SuperLite II-XL 60 fire-rated product
USE: This restaurant combined safety with decorative art glass to achieve the look intended by the designer.
CONTACT: safti.com, Circle 517



SPECIFICATION SPECIFICS

Along with the recent explosion of fire-rated product offerings has come some confusion in terms of which products are most appropriate for certain applications.

"Reviewing the spec sheets or product labels can quickly point specifiers to where the product can be used, what tests it has passed, such as the hose stream test, and its fire-rating in minutes," advises Razwick.

Similarly, Penrod recommends consulting listings from the third-party laboratories to double check that the products have passed all of the prescribed test standards for the application and that the glass and frames are tested and approved as a system.

"Specifiers should also have a general knowledge of which locations require special fire-rated glazing products in a building," adds Razwick. "For example, fire-rated wall assemblies in fire barriers or exit enclosures may often have more stringent requirements than door and window openings in rated corridors."

Another important distinction is determining whether the application requires fire-resistive or fire-protective glazing, and understanding duration rating. "The biggest mistake that we constantly see is the misapplication of fire-protective glazing in applications that require blocking radiant heat, in addition to smoke and flames," relates San Diego. "Just because a product is rated for 60 minutes, for example, does not mean that it can be used in any 60-minute application."

One rule of thumb to keep in mind is that fire-resistive glazing is almost always limited to 45 minutes, according to Foote. So, if products, except for doors, exceed this limitation, one should be suspicious.

Furthermore, San Diego points out that applications of glazing 60 minutes and above must meet ASTM E-119 requirements, which really means that fire-resistive glazing is required. "Fire-protective glazing, like wired glass and ceramics, even if it is rated up to 90 and 180 minutes, respectively, does not meet this requirement."

Going beyond the codes, Foote actually recommends fire-protective glazing, even for 45-minute applications. "One would find it very difficult to exit an enclosure through a hallway with an active fire on the other side. That is why we recommend fire protective glazing for applications such as schools where confusion can exist and limit the ability of student egress."

PROJECT: Fort Drum

PRODUCT: Safli First SuperLite/GPX

USE: Safli First SuperLite/GPX combination created a transparent wall system to accent the wall of flags at New York's Fort Drum Battle Simulation Center.

CONTACT: safli.com, Circle 516



PROJECT: California State Fullerton, Rec Center

PRODUCTS: SAFI FIRST'S SuperLite II-XL120

USE: A two-hour rated product can be laminated, insulated, tinted, patterned, frosted, mirrored, reflective, curved, segmented or decorative. In addition, it can be designed for bullet, blast or hurricane resistance, with enhanced acoustical and energy performance.

CONTACT: safli.com, Circle 515

**FIRE-RATED GLAZING
NO LONGER IS THE
BANE OF THE DESIGNER**

LOOKING FORWARD

Although so many new fire-rated product offerings have already come to the fore, manufacturers expect the barrage to continue. "The exciting thing about the fire-rated glazing industry is that it's always changing," confirms Razwick. "With the push toward sustainability, systems that allow more sunlight and balance heat gain and loss with fire and life safety will continue to be on the rise."

And as significant advances in glass technology and glass design come out, Foote anticipates that such products will eventually "be married to both fire-protective and fire-resistive glazing, either through lamination or insulation to provide innumerable opportunities to meet the architects' design criteria."

Summing it all up, Foote concludes, "The bottom line is that fire-rated glazing no longer is the bane of the designer, but opens up unlimited design opportunities."



SIDEBAR:

CHICAGO'S ART INSTITUTE COMBINES
FIRE PROTECTION AND TRANSPARENCY

FIRE- RATED GLASS

When designing the new Modern Wing at Chicago's Art Institute, Renzo Piano's vision called for sunlight brought deep into the building and clear views from the street through the building's interior walls and out to the nearby Millennium Park. However, to meet fire and life safety codes, the interior walls also needed to be fire-rated.

According to Jeff Razwick, vice president of business development, Technical Glass Products, Kirkland, Wash., traditional fire-rated product selections would have severely limited the architect to solid walls or bulky glazed framing systems. "Both options would limit sightlines, light and integration of the interior design with the dramatic exterior curtain walls."

Fortunately, times have changed, and the architect could create an attractive glazed fire-rated application that combined Pilkington Pyrostop transparent wall panels with TGP's Fireframes Aluminum Series.

"The frames' narrow profiles were able to match the large curtain wall and improve sightlines, as well as provide the necessary fire protection," relates Razwick.



PROJECT: Chicago Art Institute's new Modern Wing

PRODUCTS: Pilkington Pyrostop transparent wall panels with Technical Glass Product's Fireframes Aluminum Series

USE: This combination enabled Renzo Piano to create a stunning daylight space for the Chicago Art Institute's new Modern Wing. Offering narrow profiles and crisp sightlines, the Fireframes Aluminum Series from Technical Glass Products offers greater design flexibility. Custom extrusions are available and color can be customized to match any color theme.

CONTACT: ireglass.com, Circle 514



PRODUCT: Pyran Platinum, SAFTI FIRST

USE: Pyran Platinum from SAFTI FIRST is a fire-rated ceramic glass free of toxins and hazardous heavy metals. Thanks to a manufacturing process, the final product offers optical clarity free of tints and noticeable distortion.

CONTACT: safti.com, Circle 513



PRODUCT: Technical Glass Products' Fireframes ClearFloor

USE: Impact-resistant and fire-rated for two hours it is also a durable, non-slip walking surface and is approved for loads up to 150 psf.

CONTACT: ireglass.com, Circle 512