Volume 34, Number 6, June 1999
1999 Archives Series
A Page from the USGlass Archives

The Next Thousand Years

Fire-Rated Glazing in the Next Millennium

by Jerry Razwick

With the approach of the year 2000, a sense of anticipation is sweeping the nation. All kinds of predictions are being made as to what life will be like in the new millennium. Will our computers survive the Y2K bug? Will our economy boom or bust? In many cases, it seems one guess is as good as another. Only time will prove which theory is correct.

When it comes to fire-rated glazing, however, there are some fairly safe bets as to what the future holds. By examining the latest industry trends, we can offer some fairly reliable forecasts about what lies ahead.

PREDICTION #1: Advanced Products Will Appear

Based on the last two decades, we can conjecture that new product development will continue to redefine what is categorized as fire-rated glass. Twenty years ago, the process of choosing a fire-rated product was simple: Ask for wired glass.

But much has changed in 20 years. Today, there are many products on the market that have exploded the field of fire-rated glass. Not only are there products that surpass the fire protection of wired glass, they can also offer:

- High impact safety (CPSC 16CFR1201, Cat. II);
- Energy efficiency (insulated units with low-E and/or argon);
- Sound reduction;
- Design potential (etching, sandblasting, beveling);
- Privacy (obscured surfaces);
- One-way visibility (mirrored); and
- Heat transfer resistance.

It is easy to find a product that specifically meets a unique combination of requirements. With the advance of manufacturing technology, such developments can only be expected to continue well into the future.

PREDICTION #2: Greater Caution Will be Exercised

As exciting as all the new possibilities are, they do mean paying closer attention to product selection and installation. In the new generation of fire-rated glass, no two products are exactly the same. They don't all carry the same ratings. They don't all offer the same characteristics. And they can't all be installed in the same sizes or in the same frames.

Generically specifying "fire-rated glass" will no longer suffice: Glaziers need to familiarize themselves with the differences among the options. For instance, one relatively new tempered product on the market claims a 60-minute fire rating. To the casual observer, it would seem to be comparable to other 60-minute products, such as ceramics or multi-laminates. However, the tempered product cannot withstand the hose stream test—a mandatory requirement of 60-minute test standards. Should water from a sprinkler or fire hose come in contact with the tempered glass while it is hot from a fire (perhaps in as little as five minutes), the product may shatter and fall out of the frame, leaving no protection at all. Additionally, the tempered glass product has a coating on one side, which must face the anticipated direction of the fire. Since no one knows when or where a fire may strike, relying on such a product may be questionable.

All parties involved in specifying and installing fire-rated glazing must examine the pros and cons of each product before making a selection. This extra degree of caution is critical for life safety and for liability avoidance.

Rather than simply looking for the lowest price, glaziers can provide an invaluable service to architects and general contractors by questioning specifications they feel may not be appropriate. Glaziers are responsible for supplying products that meet fire code requirements. It is not enough to say " ... I just supplied what the architect specified." Remember, you are the glass expert. A little caution up front may save costly legal battles later.

PREDICTION #3: Stricter Codes Will Dominate

With the dawn of the new millennium, code requirements across the country are being standardized and up-

dated to conform to international guidelines. The goal is to have one universal system, so whether you're in Seattle, Chicago or Miami, you'll be meeting the same codes. The processes are now underway to make this vision a reality in the near future.

In all likelihood, what that will mean for fire codes is the more stringent guidelines will be adopted as the benchmark. As an example, the hose stream test mentioned earlier has been a national requirement for glass to earn a rating of 45 minutes or greater. In 1998, the SBCCI, the governing body for building codes in Southeastern United States, voted to make the hose stream test mandatory for all fire-rated glass in their jurisdiction—whatever the rating. Since this is already the policy in Canada, it is probably safe to assume the change will become a national requirement in 2000. Products currently on the market that cannot pass the hose stream test could see their fire-rated status in jeopardy should such a change occur.

Codes will continue to demand higher levels of product performance as new technology makes it possible for glass to comply. At the same time, codes are becoming less restrictive regarding the size of glass allowed. While 1,296 square inches used to be the maximum size for fire-rated polished wired glass, new products on the market have proven they can perform just as well or better in much larger sizes and the codes have adapted accordingly.

PREDICTION #4: Increased Redundancies

You may have noticed the news stories in the past year regarding sprinkler failures. It turns out one of the most popular sprinkler systems have had a failure rate of close to 40 percent in laboratory tests.

A heavy dependence on sprinklers could pose a serious threat to safety for several reasons. First, if sprinklers do not activate quickly enough, ordinary glass may shatter as soon as the water touches it, leaving no protection in the opening. Second, to work properly, the sprinklers have to bathe the glass entirely and evenly—in an uninterrupted manner. However, this is not realistic as drapes, blinds, shutters, and other objects frequently are located near the surface of the window glass. They would interfere with water from the sprinkler reaching the glass and likely cause catastrophic system failure. Third, since sprinklers are "active" systems (i.e., something must occur to make them operate), any malfunction may result in no fire protection at all.

This does not mean sprinklers are all bad; they regularly save lives. But they should be used in conjunction with fire-rated glass, not in place of it. Fire-rated glass and frames are "passive" systems; they do not rely on other systems to do their job. Fire-rated glass performs its function in a fire even if smoke detectors and sprinklers do not.

Above: Port Susan Middle School in Stanwood, WA, and left, Shaklee Industries in Palo Alto, CA, opted for the protection TGP's fire-rated glazing products provide.

What it All Means

What do all these predictions mean to you? Following are some practical suggestions to ensure your company is ready for the new millennium and the changing-face of fire-rated glazing:

1. Develop a relationship with reputable sources of information in the fire-rated glass industry.
2. Exercise your responsibility as the glass expert.
3. Be future-minded. **USG**

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