

Safe Solutions to Wired Glass

Wired glass is a common sight in the windows and doors of most schools and universities mainly because it was the only cost-effective, fire-rated glazing product available at one time. Most school facility managers, administrators and architects are now aware that using wired glass to meet fire codes can jeopardize student safety. It is less than half as strong as ordinary glass and extremely dangerous upon impact.

“Most people believe the purpose of wire in glass is safety and security, but it isn’t,” says Drew Gilliland, Associate Director of Physical Activity and Recreation Services, at the University of Oregon. “The wire mesh simply holds the glass in place during a fire. The product is actually quite weak and breaks more easily. It is also more dangerous when broken, causing extensive injuries because of the jagged break patterns due to the wire.”

Each year hundreds of children and young adults are seriously or permanently injured in wired glass accidents. According to Dr. Philip Graitcer, Center for Injury Control at Rollins School of Public Health in Atlanta, this figure could be much higher.

“Since 1977 only wired glass and tempered or laminated glass (safety glass) have been permitted in hazardous locations such as school doors or door side panels. If there is any annealed or plate glass in these installations, they are part of an original door installation dated before 1977, or they are part of an illegal replacement. Tempered and laminated glasses are unlikely to produce the kinds of lacerations and cuts that are reported. I would conservatively estimate that 90% of the 2,500 glass door injuries seen each year in the CPSC (Consumer Products Safety Commission) system involve wired glass,” states Graciter.

In response to pressure from advocacy groups, glass industry members, and various state representatives, building codes are changing. The 2003 IBC and NFPA 5000 codes have eliminated the use of wired glass in the construction of all educational and athletic facilities. The state of Oregon may soon become the first in the nation to protect its citizens from the debilitating injuries caused by human impact with wired glass in all occupancies, not just educational and athletic facilities.

Given recent code changes and the first ever personal injury and product liability lawsuit filed against wired glass manufacturers, it may no longer be a question of if, but when, schools will replace the wired glass in high impact areas. So, what exactly are the alternatives to wired glass that are both safety- and fire-rated?

Oregon’s Glass Action

Two years ago Jarred Abel, a recent University of Oregon graduate, suffered severe nerve and tendon damage to his left arm from wired glass when exiting the University’s gym after a basketball game. After the accident, the University responded by putting a 7 mil film on wired glass in all activity areas and any locations where human impact might occur.

About a year later, a second accident occurred at a window with the film on it. Fortunately, the film prevented an injury, but redirected attention to the glazing’s inherent weakness. While film prevents injuries, it does not prevent the glass from breaking. In order to avoid future replacement costs, the University began talking with several wireless fire- and safety-rated glass manufacturers about replacing the 16 wired glass windows in its gyms with something stronger. They eventually decided on SuperLite I – one of the many fire- and safety-rated glazing products manufactured by SAFTI (Safety and Fire Rated Technology International), a division of O’Keeffe’s, Inc. in San Francisco.

“[SuperLite I](#) is ten times stronger than wired glass and definitely meets the fire rating,” says Gilliland. “Plus, if the glass ever breaks it will shatter into little pieces and prevent the unfortunate injuries caused by wires. We prefer this product in areas with any chance of impact, such as exit doors, gyms and other locations where people are running and might hit it.”

Getting to Know Your Glass

There are many safe alternatives to unsafe wired glass in schools depending on your school’s budget, aesthetic or maintenance concerns, and the amount of fire protection required in any location. The good news is that impact safety no longer needs to be sacrificed to fire safety.

If you are looking for a filmed wired glass product, SAFTI offers [SuperLite I-W](#), the first wired glass product to meet CPSC Category I and II safety standards and the first to be successfully fire tested to 45-minutes with hose stream (NFPA 252 and NFPA 257). It is safe for use in fire doors and other assemblies

where impact is a concern. SuperLite I-W is the least expensive safety-rated alternative to traditional wired glass (which does not meet CPSC safety glazing standards).

If you want a clear, wireless, window product, several manufacturers (e.g., SAFTI, Technical Glass Products, InterEdge and Vetrotech) provide safety glazing products that are fire rated from 20- to 45-minutes. Given the complexities of building codes and the technical nature of these glazing products, it is important to consult with the manufacturer about a product's fire and safety ratings and listings.

So, whether it's filmed wired or wireless glass, there are several safe alternatives to unsafe traditional wired glass. These alternatives are available at various performance and price points. And schools and universities are responding proactively – before an accident occurs.

“We need to look at the safer alternatives,” says Gilliland. “Some are comparable in cost to wired glass, while others are more expensive but offer superior fire protection. But for the minimal extra cost, you can do a great service by replacing wired glass with fire-rated safety glass.”