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GLASS

MIRRORS

WINDOWS

DOORS

Standing-in for wired glass

Market offers many substitute

By Julie Ruth

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The International Code Council's decisions last spring may significantly restrict fire-door and fire-window manufacturers from using wired glass in their products (see Glass Magazine "Code Guide," September, p. 51). Although wired-glass manufacturers will appeal the ICC's actions taken during its May 2004 hearings, this seems to be a good time to take a look at alternative products that may serve as replacements.

The table below shows what the requirements will be for various applications if the changes are upheld. Products appropriate for each application, based on manufacturers' information, are included for each category.

Applications of Fire Resistance and Safety Classified Products ^{1, 2}						
Fire Resistance Rating						
Glazing Classification	20 minutes	45 minutes ³	1 hour ³	1½ hours ³	2 hours ³	3 hours ³
None or American National Standards Institute ANSI Z97.1	<i>Applications:</i> Windows that are not considered hazardous locations in 1-hour-and-30-minute rated corridor walls	<i>Applications:</i> Windows that are not considered hazardous locations in fire partitions ⁴ and 1-hour rated exterior walls ⁵	<i>Applications:</i>	<i>Applications:</i> Windows that are not considered hazardous locations in 1½ - and 2-hour rated fire walls and fire barriers ⁶	<i>Applications:</i> Windows that are not considered hazardous locations in 2- or 3-hour rated fire walls or fire barriers ⁶	<i>Applications:</i> Windows that are not considered hazardous locations in 4-hour rated fire walls or fire barriers ⁶
U.S. Consumer Product Safety Commission CPSC 16 CFR, Category I	<i>Applications:</i> • Openings less than 9 square feet in size, in 20-minute rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 20-minute rated door side lites <i>Products:</i> • Pyroguard Clear (20- or 30-minute rated), by CGI International • Pyroshield™ Plus by General Glass International Corp. and Pilkington	<i>Applications:</i> • Openings less than 9 square feet in size, in 45-minute rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 45-minute rated door side lites <i>Products:</i> • Pyroshield™ Plus by General Glass International Corp. and Pilkington	<i>Applications:</i> • Openings less than 9 square feet in size, in 1-hour rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 1-hour rated door side lites <i>Products:</i>	<i>Applications:</i> • Openings less than 9 square feet in size, in 1½- hour rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 1½- hour rated door side lites <i>Products:</i>	<i>Applications:</i> • Openings less than 9 square feet in size, in 2-hour rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 2-hour rated door side lites <i>Products:</i>	<i>Applications:</i> • Openings less than 9 square feet in size, in 3-hour rated swinging fire doors not within 60 inches of pools, tubs, showers or spas • Openings less than 9 square feet in size, in 3-hour rated door side lites <i>Products:</i>

<p>CPSC 16 CFR, Category II</p>	<p>Applications: Openings of all sizes in all 20-minute fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •Pyroedge 20 by InterEdge Technologies •Safti Superlite I, Superlite I-XL and Superlite I-W (rated 20 minutes) by O’Keeffe’s Inc. •Pyrostop (rated 20 minutes) by Pilkington •Fireglass 20 by Technical Glass Products Inc. •FireLite NT (doors only) and FireLite Plus (rated 20 minutes) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 20 minutes) by Vetrotech Saint-Gobain 	<p>Applications: Openings of all sizes in all 45-minute or less fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •Pyrobel (rated 45 minutes) by InterEdge Technologies •Safti Superlite I-W and Superlite II-XL (rated 45 minutes) by O’Keeffe’s Inc. •Pyrostop (rated 45 minutes) by Pilkington •FireLite NT (doors only) and FireLite Plus (rated 45 minutes) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 45 minutes) and SwissFlam 45-N2 by Vetrotech Saint-Gobain 	<p>Applications: Openings of all sizes in all 1-hour or less fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •Pyrobel (rated 1 hour) by InterEdge Technologies •Safti Superlite I-W and Superlite I-XL (rated 1 hour) by O’Keeffe’s Inc. •Pyrostop (rated 1 hour) by Pilkington •FireLite NT (doors only) and FireLite Plus (rated 1 hour) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 1 hour) and SwissFlam 60-N2 by Vetrotech Saint-Gobain 	<p>Applications: Openings of all sizes in all 1½- hour or less fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •Pyrobel (rated 90 minutes) by InterEdge Technologies •Safti Superlite I-W and Superlite I-XL (rated 90 minutes) by O’Keeffe’s Inc. •Pyrostop (rated 90 minutes) by Pilkington •FireLite NT (doors only) and FireLite Plus (rated 90 minutes) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 90 minutes) and SwissFlam 90-N2 by Vetrotech Saint-Gobain 	<p>Applications: Openings of all sizes in all 2-hour or less fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •Pyrobel (rated 2 hours) by InterEdge Technologies •Safti Superlite II-XL (rated 2 hours) by O’Keeffe’s Inc. •Pyrostop (rated 2 hours) by Pilkington •FireLite NT (doors only) and FireLite Plus (rated 2 hours) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 2 hours – doors only) and SwissFlam 120-N2 by Vetrotech Saint-Gobain 	<p>Applications: Openings of all sizes in all 3-hour or less fire-rated doors</p> <p>Products:</p> <ul style="list-style-type: none"> •FireLite NT (doors only) and FireLite Plus (rated 3 hours) by Technical Glass Products Inc. •Keralite FR-F, Keralite FR-L (rated 3 hours – doors only) by Vetrotech Saint-Gobain
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Notes:

1. Small lites less than 3 inches in diameter do not have to be safety glazed in accordance with ANSI Z97.1 or CPSC 16 CFR. Such lites only need to comply with the fire resistance rating required for the door.
2. Products shown for one application are also appropriate for applications requiring a lower fire resistance rating with the same or lower safety glazing classification, and for applications requiring a lower safety glazing classification with the same or lower fire resistance rating.
3. The hose stream test is required for fire resistance ratings of 45 minutes or more.
4. This is a limited application, as windows in 1-hour rated fire partitions are not common. Fire partitions are the separating walls between dwelling units, sleeping units in hotels and tenant spaces in a covered mall.
5. Openings in fire resistance rated exterior walls can be fire protection rated, but they do not have to be unless the wall is very close to another building or the lot line. If the opening is fire protection rated, the amount of area permitted to be openings in the exterior wall increases. Exterior walls rated 1 hour most commonly occur in light steel frame construction, such as for a strip mall or small office building.
6. Fire walls and fire barriers separate buildings or spaces. A 1- or 2-hour rated fire wall or fire barrier could only be used to separate two occupancies that are considered to be of low fire risk, such as a warehouse or storage facility for noncombustible goods. A 3- or 4-hour fire wall would be used to separate occupancies that are considered to be of a higher fire risk, from a retail store or office up to warehouses or factories for highly flammable materials. Opening in these walls shall not exceed 120 square feet in area, and the aggregate length of the openings cannot exceed 25 percent of the length of the fire wall or fire barrier, unless the building on both sides of the wall is fully sprinklers.

Ruth is a code consultant to the American Architectural Manufacturers Association. She says the appropriateness of each product listed for the applications is based on manufacturer’s literature only. Verify information and application with the manufacturer before purchasing or using the products.

Note that although great effort has been made to include all the appropriate products, it is anticipated that some might be missed. If you are aware of any other products available in the U.S. marketplace classified as both safety glazing and fire resistant, please send the information to Nancy M. Davis at Glass Magazine, e-mail nancy@glass.org, to add your products to the list.

InterEdge Technologies: www.firesafe-glass.com
O'Keeffe's Inc.: www.okeeffes.com
Safti: www.safti.com
Pilkington: www.pilkington.com
Technical Glass Products Inc.: www.fireglass.com
Vetrotech Saint-Gobain: www.vetrotech.com
General Glass International Corp.: www.generalglass.com
CGI International Ltd.: www.cgii.co.uk



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