

Safe Doors • • • Glass Doors

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Sliding glass doors, storm doors, framed or unframed glass entrance doors, adjacent glazed panels which may be mistaken for entrances, glass bath enclosures, and shower doors expose people to frequent physical contact with glass in everyday family activities in the home. These glass components present an extremely dangerous hazard to the daily safety of men, women, and children of all ages and degrees of physiological capability. The increased use and widespread acceptance of glass in residential designs has unfortunately created a generally casual attitude about these potential safety hazards. This, in itself, is a safety hazard.

Studies emphasize that in 75 percent of all residential glass-door accidents, the victims were in the process of moving from the interior of the residence to an exterior area. Of these accidents, one-third were in the 5- to 14 year age group, which indicates the susceptibility of children to this type of accident.

In another area of high ~~Blacksburg, Virginia~~ frequency, the extreme slipping potential which exists in the use of tubs and showers, combined with the limited space within these enclosures, increases the probability of serious injury if glass is part of the tub or shower installation.

The severity of injuries usually associated with residential glass-door accidents is often increased by the use of annealed glass in these installations. Annealed glass, subjected to breaking loads or forces, shatters into small sharp slivers and large, jagged pieces with extremely sharp edges and points. In cases where the victim falls through the glass, these large, jagged pieces may fall from above as a guillotine, or, if large fragments in the lower section remain firmly attached to the frame, the victim's body can be cut as it falls against the sharp, exposed edge of the glass. Injuries suffered under these conditions can result in serious lacerations, dismemberment, disfiguring scars, and even death to the victim.



Seventy-five percent of all residential glass door accidents occur as the victim is in the process of moving from the interior of the residence to an exterior area.



Slipping while bathing in a tub or shower equipped with glass doors or enclosures increases the probability of serious accidental injury.

The use of safety glazing in all potentially hazardous residential locations is, by far, the most effective alternative available in building for safety. Four types of safety glazing in general use today are tempered glass, laminated glass, wired glass, and the substitution of glass with a variety of acrylic plastics. All four of these glazing materials exhibit much higher impact-resistance characteristics than annealed glass of comparable thicknesses. Tempered glass has the added safety feature of shattering into tiny, irregular shapes resembling rock salt as its impact resistance is exceeded. Laminated glass and wired glass can cause severe lacerations on impact sufficient to drive through the installation, but the laminate or the wire will tend to confine the shattered glass pieces and provide a relatively high degree of resilience to the installation. Acrylic plastics offer a safe glazing material having a high-impact-resistance factor. The major objectionable features presented by acrylic glazing at present are the special cleaning requirements and its high susceptibility to surface scratches.

Safety glazing, in itself, will not prevent accidental incidents, nor will it even reduce the frequency of these incidents, but it will definitely decrease the severity of injuries suffered as a result of this category of residential accident.

A very simple safety measure which may further reduce the number of glass-door accidents is the application of decorative decals or other similar designs at adult eye level and children's eye level to call conscious attention to the presence of the glass. Grill work and bars incorporated pleasingly into the design of the glass component will accomplish the same purpose and, depending upon the strength of the material used, may offer further protection against injury on impact.

Installation techniques play an important role in the ultimate safety of a glass door or enclosure. Properly installed glazing should resist breakage caused by shocks from slamming doors and minor collisions. Improper installations of glass doors and their hardware may generate safety hazards, including doors that require the application of abnormal forces for normal operation, inadequate hardware which breaks easily or causes the door to stick or sag, and an unbalanced door which may swing shut or against a wall with fracturing force. All of these safety

hazards may be avoided by exercising proper installation techniques.

Great effort has been exerted to call attention to residential glass-door hazards and much has been accomplished toward the adoption of safety-glass standards in residential construction. Very little actual progress has been made by state and local building groups to require their general usage. Therefore, the burden of including safety-glass door installations as requirements in residential housing lies primarily on the shoulders of the planners, architects, designers, and others who specify building materials for the home.

RECOMMENDATIONS:

The following recommendations are significant as important procedures by which the serious hazards associated with residential glass doors and enclosures may be significantly reduced:

- All residential glass doors, including sliding glass doors, storm doors, framed and unframed glass entrance doors, adjacent fixed-glass panels which may be mistaken for doors, bath enclosures, and shower doors, shall be properly installed with safety glazing materials, meeting the requirements of ANSI Z97. 1, 1972. Glass shall meet the requirements of F.S. DD-G-451C.
- To further enhance the safety features of large glass areas, the application of decorative decals or permanent design elements at adult eye level and at children's eye level shall be employed.
- Rubber welt or a flexible adhesive glazing bedding compound shall be used in the installation of all framed glass.
- Adequate hardware, of substantial quality and durability only, shall be used in glass-door installations.
- Adequate installation of glass doors shall include proper adjustment to ensure ease and dependability of operation.

Before building, consult the BOCA code.

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