

2021 Virginia Construction Code

CHAPTER 24 GLASS AND GLAZING

SECTION 2406 SAFETY GLAZING

2406.1 Human impact loads.

Individual glazed areas, including glass mirrors, in hazardous locations as defined in [Section 2406.4](#) shall comply with [Sections 2406.1.1](#) through [2406.1.4](#).

Exception: Mirrors and other glass panels mounted or hung on a surface that provides a continuous backing support.

2406.1.1 Impact test.

Except as provided in [Sections 2406.1.2](#) through [2406.1.4](#), all glazing shall pass the impact test requirements of [Section 2406.2](#).

2406.1.2 Plastic glazing.

Plastic glazing shall meet the weathering requirements of [ANSI Z97.1](#).

2406.1.3 Glass block.

Glass-block walls shall comply with [Section 2110](#).

2406.1.4 Louvered windows and жалousies.

Louvered windows and жалousies shall comply with [Section 2403.5](#).

2406.2 Impact test.

Where required by other sections of this code, glazing shall be tested in accordance with [CPSC 16 CFR Part 1201](#). Glazing shall comply with the test criteria for Category II, unless otherwise indicated in [Table 2406.2\(1\)](#).

Exception: Glazing not in doors or enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers shall be permitted to be tested in accordance with [ANSI Z97.1](#). Glazing shall comply with the test criteria for Class A, unless otherwise indicated in [Table 2406.2\(2\)](#).

TABLE 2406.2(1)
MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING [CPSC 16 CFR PART 1201](#)

EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZING IN STORM OR COMBINATION DOORS (Category class)	GLAZING IN DOORS (Category class)	GLAZED PANELS REGULATED BY SECTION 2406.4.3 (Category class)	GLAZED PANELS REGULATED BY SECTION 2406.4.2 (Category class)	DOORS AND ENCLOSURES REGULATED BY SECTION 2406.4.5 (Category class)	SLIDING GLASS DOORS PATIO TYPE (Category class)
9 square feet or less	I	I	No requirement	I	II	II
More than 9 square feet	II	II	II	II	II	II

For SI: 1 square foot = 0.0929 m².

TABLE 2406.2(2)
MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING [ANSI Z97.1](#)

EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZED PANELS REGULATED BY SECTION 2406.4.3 (Category class)	GLAZED PANELS REGULATED BY SECTION 2406.4.2 (Category class)	DOORS AND ENCLOSURES REGULATED BY SECTION 2406.4.5 ^a (Category class)
9 square feet or less	No requirement	B	A
More than 9 square feet	A	A	A

For SI: square foot = 0.0929 m².

- a. Use is only permitted by the exception to [Section 2406.2](#).

2406.3 Identification of safety glazing.

Except as indicated in [Section 2406.3.1](#), each pane of safety glazing installed in hazardous locations shall be identified by a manufacturer's designation specifying who applied the designation, the manufacturer or installer and the safety glazing standard with which it complies, as well as the information specified in [Section 2403.1](#). The designation shall be acid etched, sand blasted, ceramic fired, laser etched, embossed or of a type that once applied, cannot be removed without being destroyed. A label meeting the requirements of this section shall be permitted in lieu of the manufacturer's designation.

Exceptions:

- For other than tempered glass, manufacturer's designations are not required, provided that the *building official* approves the use of a certificate, affidavit or other evidence confirming compliance with this code.
- Tempered spandrel glass is permitted to be identified by the manufacturer with a removable paper designation.

2406.3.1 Multipane assemblies.

Multipane glazed assemblies having individual panes not exceeding 1 square foot (0.09 m²) in exposed areas shall have one pane or more in the assembly marked as indicated in [Section 2406.3](#). Other panes in the assembly shall be marked "CPSC 16 CFR Part 1201" or "ANSI Z97.1," as appropriate.

2406.4 Hazardous locations.

The locations specified in [Sections 2406.4.1](#) through [2406.4.7](#) shall be considered to be specific hazardous locations requiring safety glazing materials.

2406.4.1 Glazing in doors.

Glazing in all fixed and operable panels of swinging, sliding and bifold doors shall be considered to be a hazardous location.

Exceptions:

- Glazed openings of a size through which a 3-inch-diameter (76 mm) sphere is unable to pass.
- Decorative glazing.
- Glazing materials used as curved glazed panels in revolving doors.

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4. Commercial refrigerated cabinet glazed doors.

2406.4.2 Glazing adjacent to doors.

Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge of the glazing is within a 24-inch (610 mm) arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the walking surface shall be considered to be a hazardous location.

Exceptions:

1. Decorative glazing.
2. Where there is an intervening wall or other permanent barrier between the door and glazing.
3. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with [Section 2406.4.3](#).
4. Glazing in walls on the latch side of and perpendicular to the plane of the door in a closed position in one- and two-family dwellings or within dwelling units in Group R-2.

2406.4.3 Glazing in windows.

Glazing in an individual fixed or operable panel that meets all of the following conditions shall be considered to be a hazardous location:

1. The exposed area of an individual pane is greater than 9 square feet (0.84 m²).
2. The bottom edge of the glazing is less than 18 inches (457 mm) above the floor.
3. The top edge of the glazing is greater than 36 inches (914 mm) above the floor.
4. One or more walking surface(s) are within 36 inches (914 mm), measured horizontally and in a straight line, of the plane of the glazing.

Exceptions:

1. Decorative glazing.
2. Where a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches (864 to 965 mm) above the walking surface. The rail shall be capable of withstanding a horizontal *load* of 50 pounds per linear foot (730 N/m) without contacting the glass and be not less than 1½ inches (38 mm) in cross-sectional height.
3. Outboard panes in insulating glass units or multiple glazing where the bottom exposed edge of the glass is 25 feet (7620 mm) or more above any grade, roof, walking surface or other horizontal or sloped (within 45 degrees of horizontal) (0.79 rad) surface adjacent to the glass exterior.

2406.4.4 Glazing in guards and railings.

Glazing in *guards* and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height above a walking surface shall be considered to be a hazardous location.

2406.4.5 Glazing and wet surfaces.

Glazing in walls, enclosures or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and indoor or outdoor *swimming pools* where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) measured vertically above any standing or walking surface shall be considered to be a hazardous location. This shall apply to single glazing and all panes in multiple glazing.

Exception: Glazing that is more than 60 inches (1524 mm), measured horizontally and in a straight line, from the water's edge of a bathtub, hot tub, spa, whirlpool or *swimming pool*.

2406.4.6 Glazing adjacent to stairways and ramps.

Glazing where the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the plane of the adjacent walking surface of *stairways*, landings between flights of *stairs* and ramps shall be considered to be a hazardous location.

Exceptions:

1. The side of a *stairway*, landing or *ramp* that has a *guard* complying with the provisions of [Sections 1015](#) and [1607.9](#), and the plane of the glass is greater than 18 inches (457 mm) from the railing.
2. Glazing 36 inches (914 mm) or more measured horizontally from the walking surface.

2406.4.7 Glazing adjacent to the bottom stairway landing.

Glazing adjacent to the landing at the bottom of a *stairway* where the glazing is less than 60 inches (1524 mm) above the landing and within a 60-inch (1524 mm) horizontal arc that is less than 180 degrees (3.14 rad) from the bottom tread *nosing* shall be considered to be a hazardous location.

Exception: Glazing that is protected by a *guard* complying with [Sections 1015](#) and [1607.9](#) where the plane of the glass is greater than 18 inches (457 mm) from the *guard*.

2406.5 Fire department access panels.

Fire department glass access panels shall be of tempered glass. For insulating glass units, all panes shall be tempered glass.