

**Illustration of the IBC Change Affecting Use of Wired Glass in Impact/Safety Applications**

Outlined below is the old (IBC 2000) and new (IBC 2003) wording regarding Safety Glazing. The areas relevant to wired glass are underlined.

The IBC 2000 edition reads...

**IBC 2000...OLD**  
**SECTION 2406**  
**SAFETY GLAZING**

**2406.1 Human impact loads.** Individual glazed area, including glass mirrors, in hazardous locations as defined in Section 2406.2 shall pass the test requirements of CPSC 16 CFR 1201, listed in Chapter 35. Glazing shall comply with the CPSC16 CFR. Part 1201 criteria for Category I or Category II as indicated in Table 2406.1.

**Exceptions:**

1. Polished wire glass installed in fire doors, fire windows and view panels in fire-resistant walls shall comply with ANSI Z971.1 listed in Chapter35.
2. Plastic glazing shall meet the weathering requirements of ANSI Z97. listed in Chapter 35.
3. Glass-block walls shall comply with Section 2101.2.4.
4. Louvered windows and jalousies shall comply with Section 2403.5.

**TABLE 2406.1**  
**MINIMUM CATEGORY CLASSIFICATION OF GLAZING**

<b>EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE</b>	<b>GLAZING IN STORM OR COMBINATION DOORS</b> (Category class)	<b>GLAZING IN DOORS</b> (Category class)	<b>GLAZED PANELS REGULATED BY ITEM 7 OF 2406.2</b> (Category class)	<b>GLAZED PANELS REGULATED BY ITEM 6 OF SECTION 2406.2</b> (Category class)	<b>DOORS AND ENCLOSURES REGULATED BY ITEM 5 OF SECTION 2406.2</b> (Category class)	<b>SLIDING GLASS DOORS PATIO TYPE</b> (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

**SECTION 2406  
SAFETY GLAZING**

**2406.1 Human impact loads.** Individual glazed area, including glass mirrors, in hazardous locations as defined in Section 2406.3 shall comply with Sections 2406.1.1 through 2406.1.5.

**2406.1.1 CPSC 16 CFR 1201.** Except as provided in Sections 2406.1.2 through 2406.1.5, all glazing shall pass the test requirements of CPSC 16 CFR 1201, listed in Chapter 35. Glazing shall comply with the CPSC 16 CFR, Part 1201 criteria, for Category I or II as Indicated in Table 2406.1.

**2406.1.2 Wired Glass.** In other than Group E, wired glass installed in fire doors, fire windows and view panels in fire-resistant walls shall be permitted to comply with ANSI Z97.1.

**2406.1.3 Plastic glazing** . Plastic glazing shall meet the weathering requirements of ANSI Z97.1.

**2406.1.4 Glass block.** Glass block walls shall comply with Section 2101.2.5.

**2406.1.5 Louvered windows & jalousies.** Louvered windows and jalousies shall comply with Section 2403.5.

**TABLE 2406.1  
MINIMUM CATEGORY CLASSIFICATION OF GLAZING**

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 ITEM 7 OF 2406.3 (Category class)	GLAZED PANELS REGULATED BY ITEM 6 OF SECTION 2406.3 (Category class)	DOORS AND ENCLOSURES REGULATED BY ITEM 5 OF SECTION 2406.3 (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

So, what is Group E? It is defined in IBC 2003 below, as...

**SECTION 305  
EDUCATIONAL GROUP E**

**305.1 Education Group E.** Education Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12<sup>th</sup> grade. Religious educational rooms and religious auditoriums, which are accessory to churches in accordance with Section 302.2 and have occupant loads less than 100, shall be classified as A-3 occupancies.

**305.2 Day care.** The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 ½ years of age, shall be classified as a Group E occupancy.

**IBC 2006...CURRENT**  
**SECTION 2406**  
**SAFETY GLAZING**

**ICC Board of Directors Action on 2003/2004 Code Change Appeals**

As noted in the 2004 Supplement to the International Codes, the final action on Code Changes FS138-03/04 (IBC Section 1405.12.2), S85-03/04 (IBC Section 2406.1.2) and RB205-03/04 (IRC Section R613.2) was stayed by the ICC Board of Directors, pending resolutions of the appeals. The appeals were processed in accordance with ICC Council Policy #1- Appeals. At the ICC Board. The following is the disposition of these code changes and the impact on the 2004 Supplement to the International Codes.

**FS138-03/04**

The ICC Board of Directors denied the appeal and the stay is no longer in effect. Accordingly, Section 1405.12.2 of the 2004 Supplement to the International Building Code (page IBC-45) now reads as follows:

**Section 1405.12.2 Add new to read as shown: (FS138-03/04)**

**1405.12.2 Windows sills.** In occupancy Group R, one-and two family and multiple single family dwellings, where the rough opening for the still portion of an operable window is located more than 72 inches above the grade or other surface below, the rough opening for the still, or lowest part of the operable portion of the window, shall be a minimum of 24 inches above the finished floor of the room in which the window is located.

**Exceptions.** Windows whose openings will not allow a 4 inch diameter sphere to pass through the opening when the opening is in its largest opened position.

**S85-03/04**

The ICC Board of Directors denied the appeal and the stay is no longer in effect. Accordingly, Section 2406.1.2 of the 2004 Supplement to the International Building Code (page IBC-82) now reads as follows:

**Section 2406.1.2 Wired glass. Delete section without substitution: (S85-03/04)**

**RB205-03/04**

The ICC Board of Directors denied the appeal and the stay is no longer in effect. Accordingly, Section R613.2 of the 2004 Supplement to the International Residential Code (page IRC-42) now reads as follows:

**Section R613.2 Add new section to read as shown: (RB205-03/04)**

**R613.2 Windows sills.** In dwelling units, where the rough opening for the still portion of and operable window is located more than 72 inches above the ground of other surface below, the rough opening for the sill portion of the window shall be a minimum of 24 inches above the finished floor of the room in which the window is located.

**Exception.** Windows whose openings will not allow a 4 inch diameter sphere to pass through the opening when the opening is in its largest opened position.



# Safety Rated Glazing

## What is all the talk I'm hearing about Fire AND Safety Rated Glazing? What about Wire Glass? Isn't Wire Glass Outlawed?

### IBC CODE - SECTION 2406 SAFETY GLAZING

IBC 2000 and Prior Codes	IBC 2003	IBC 2006 to Present
Wire Glass - was 100% exempt from applicable Safety Standards in Fire Doors.	Wire Glass - a portion of exemption was withdrawn for areas in schools, day care, etc. where children are present.	Wire Glass - 100% of exemption is withdrawn from code.

### What does it mean?

For over 25 years CPSC granted Wire Glass an exemption from complying with higher standards (Category I and II) of impact / safety in hazardous locations. Wire Glass was the primary, low cost, and readily available product that would comply with fire rated door requirements. It will not however pass Category I or II Safety testing, and was given an exemption from safety compliance for use in fire doors only.	Lawsuits involving injured children caused IBC to withdraw a percentage of the exemption. IBC 2003 says basically, if children are predominantly present, (i.e. school, day care etc.) glazing in fire doors must be fire AND safety rated per section 2406. Exemption for Wire Glass in these areas only was withdrawn.  Now, other more expensive fire rated glazing products are available that also comply with category I and/or II safety requirements.	Plenty of Fire and Safety rated glazing products are now available. Wire Glass exemption is completely withdrawn. Now, all glazing in fire doors must also be safety rated per section 2406 in hazardous locations, as originally intended per Category I and II.  Wire Glass (NON-Safety Rated) can only be used in NON-Hazardous locations. See pages 8 & 9.
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## What are the Differences Between Safety Glazing Standards? CPSC 16 CFR 1201 and ANSI Z97.1-2004

In 1977, the U.S. Consumer Products Safety Commission (**CPSC**) adopted as a mandatory federal safety regulation Safety Standard for Architectural Glazing Materials, codified at **16 CFR Part 1201**.

**ANSI Z97.1** is only a voluntary safety performance specification and test method. It does not attempt to declare when and where safety glazing materials must be used, leaving those determinations up to the building codes and to glass and fenestration specifiers.

**ANSI Z97.1** uses two Separate Impact Performance categories.

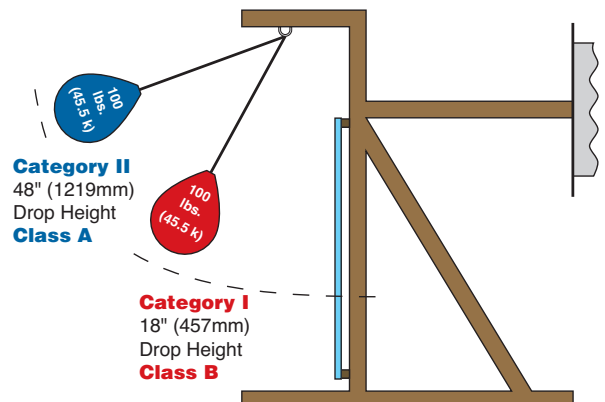
**Impact Drop:** 48-inch drop height test = **Class A** is comparable to the CPSC's Category II  
18-inch drop height test = **Class B** is comparable to the CPSC's Category I

**Size Criteria:** "U" is for Unlimited size based on passing max test size  
"L" is for Limited based on size area based on tested size

### CPSC 16 CFR 1201

**CATEGORY I:** Impact safety level designated by "code of federal regulations" part 16. (16 CFR). "Category I" glazing materials are subjected to the impact of a 100 lb. bag swung from 18" drop height (approx. 150 ft/lb impact), with no single piece of glazing material greater than 9 square feet in surface area. Cat I resembles an 85 lb. child running into the glazing material.

**CATEGORY II:** Impact safety level designated by "code of federal regulations" part 16. (16 CFR). "Category II" glazing materials are subjected to the impact of a 100 lb. bag swung from 48" drop height (approx. 400 ft/lb impact), with any piece of glazing material greater than 9 square feet in surface area. Cat II resembles a full-grown adult running into the glazing material.





## What Does the Code Say?

### IBC 2009

#### 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.

**2406.2 Impact test.** Where required by other sections of this code, glazing shall be tested in accordance with **CPSC 16 CFR 1201**. Glazing shall comply with the test criteria for **Category I or II** as 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 or B** as indicated in Table 2406.2(2).

**TABLE 2406.2(1) MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING  
CPSC 16 CFR 1201**

EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZING IN DOORS (Category class)	GLAZED PANELS REGULATED BY ITEM 7 OF SECTION 2406.4 (Category class)	GLAZED PANELS REGULATED BY ITEM 6 OF SECTION 2406.4 (Category class)	SLIDING GLASS DOORS PATIO TYPE (Category class)
9 square feet or less (0.836 M <sup>2</sup> )	I	No requirement	I	II
More than 9 square feet (0.836 M <sup>2</sup> )	II	II	II	II

Metric System (SI): 1 square foot = 0.0929 m<sup>2</sup> (Square Meters)

**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 ITEM 7 OF SECTION 2406.4 (Category class)	GLAZED PANELS REGULATED BY ITEM 6 OF SECTION 2406.4 (Category class)
9 square feet or less (0.836 M <sup>2</sup> )	No requirement	B
More than 9 square feet (0.836 M <sup>2</sup> )	A	A

Metric System (SI): 1 square foot = 0.0929 m<sup>2</sup> (Square Meters)