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## IBC 2405.3 Screening

2003 IBC - [http://publicecodes.cyberregs.com/icod/ibc/2003/icod\\_ibc\\_2003\\_24\\_sec005.htm](http://publicecodes.cyberregs.com/icod/ibc/2003/icod_ibc_2003_24_sec005.htm)

2006 IBC - [http://publicecodes.cyberregs.com/icod/ibc/2006f2/icod\\_ibc\\_2006f2\\_24\\_sec005.htm](http://publicecodes.cyberregs.com/icod/ibc/2006f2/icod_ibc_2006f2_24_sec005.htm)

2009 IBC - [http://publicecodes.cyberregs.com/icod/ibc/2009/icod\\_ibc\\_2009\\_24\\_sec005.htm](http://publicecodes.cyberregs.com/icod/ibc/2009/icod_ibc_2009_24_sec005.htm)

2012 IBC - [http://publicecodes.cyberregs.com/icod/ibc/2012/icod\\_ibc\\_2012\\_24\\_sec005.htm](http://publicecodes.cyberregs.com/icod/ibc/2012/icod_ibc_2012_24_sec005.htm)

2015 IBC - <http://codes.iccsafe.org/app/book/content/2015-I-Codes/2015%20IBC%20HTML/Chapter%2024.html>

The International Building Code (IBC) has been consistent on the language used for determining when **Screening** shall be required for glass in sloped glazing and skylights; as stated in **2405.3 Screening**. The links listed above refer to this section in each of the IBC revisions.

The screening required are not insect screens nor fall protection screens, but in the event of glass failure - the screens would either catch the glass to prevent large shards or clumps from falling on to occupants below; and/or to ensure that tempered glass breaks up into miniature fragments.

Laminated glass is often referred to as 'an exception' to **Screening**, but in actuality the **Screening** criteria does not apply to laminated glass at all. **2405.3 Screening** only applies to heat-strengthened and fully tempered glass used as monolithic glazing or when used in multiple-layer glazing systems as the bottom glass layer. This is clearly stated in the code language directly.

Before reading **2405.3 Screening**, you should first read **2405.2 Allowable glazing materials and limitations**, which states:

### **2405.2 Allowable glazing materials and limitations.**

Sloped glazing shall be any of the following materials, subject to the listed limitations.

1. For monolithic glazing systems, the glazing material of the single light or layer shall be laminated glass with a minimum 30-mil (0.76 mm) polyvinyl butyral (or equivalent) interlayer, wired glass, light-transmitting plastic materials meeting the requirements of Section 2607, heat-strengthened glass or fully tempered glass.
2. For multiple-layer glazing systems, each light or layer shall consist of any of the glazing materials specified in Item 1 above.

Annealed glass is permitted to be used as specified within Exceptions 2 and 3 of Section 2405.3.

For additional requirements for plastic skylights, see Section 2610. Glass-block construction shall conform to the requirements of Section 2101.2.5.

Now that the established glazing materials are defined, the following section is **2405.3 Screen**, which states:

### **2405.3 Screening.**

Where used in monolithic glazing systems, heat-strengthened glass and fully tempered glass shall have screens installed below the glazing material. The screens and their fastenings shall: (1) be capable of supporting twice the weight of the glazing; (2) be

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firmly and substantially fastened to the framing members and (3) be installed within 4 inches (102 mm) of the glass. The screens shall be constructed of a noncombustible material not thinner than No. 12 B&S gage (0.0808 inch) with mesh not larger than 1 inch by 1 inch (25 mm by 25 mm). In a corrosive atmosphere, structurally equivalent noncorrosive screen materials shall be used. Heat-strengthened glass, fully tempered glass and wired glass, when used in multiple-layer glazing systems as the bottom glass layer over the walking surface, shall be equipped with screening that conforms to the requirements for monolithic glazing systems.

Highlighted above is the language that clearly states that **Screening** ONLY applies to heat-strengthened and fully tempered glass used as monolithic glazing or when used in multiple-layer glazing systems as the bottom glass layer. Thus any insulated glass unit with laminated glass (with min. 30-mil PVB) used as the bottom layer shall be permitted, WITHOUT an exception. Same is true for laminated monolithic glazing.

The exceptions listed in **2405.3 Screening** are important though, as the **Screening** criteria is lessened for certain applications including greenhouses and some residential scenarios. The exceptions are as follows:

Exception: In monolithic and multiple-layer sloped glazing systems, the following applies:

1. Fully tempered glass installed without protective screens where glazed between intervening floors at a slope of 30 degrees (0.52 rad) or less from the vertical plane shall have the highest point of the glass 10 feet (3048 mm) or less above the walking surface.
2. Screens are not required below any glazing material, including annealed glass, where the walking surface below the glazing material is permanently protected from the risk of falling glass or the area below the glazing material is not a walking surface.
3. Any glazing material, including annealed glass, is permitted to be installed without screens in the sloped glazing systems of commercial or detached noncombustible greenhouses used exclusively for growing plants and not open to the public, provided that the height of the greenhouse at the ridge does not exceed 30 feet (9144 mm) above grade.
4. Screens shall not be required within individual dwelling units in Groups R-2, R-3 and R-4 where fully tempered glass is used as single glazing or as both panes in an insulating glass unit, and the following conditions are met:
  - 4.1. Each pane of the glass is 16 square feet (1.5 m<sup>2</sup>) or less in area.
  - 4.2. The highest point of the glass is 12 feet (3658 mm) or less above any walking surface or other accessible area.
  - 4.3. The glass thickness is 3/16 inch (4.8 mm) or less.
5. Screens shall not be required for laminated glass with a 15-mil (0.38 mm) polyvinyl butyral (or equivalent) interlayer used within individual dwelling units in Groups R-2, R-3 and R-4 within the following limits:
  - 5.1. Each pane of glass is 16 square feet (1.5 m<sup>2</sup>) or less in area.
  - 5.2. The highest point of the glass is 12 feet (3658 mm) or less above a walking surface or other accessible area.