

# Wildland-Urban Interface Building Codes

California Department of Forestry and Fire Protection  
Office of the State Fire Marshal



## Windows

- Requirements:
  - o Exterior windows, window walls, glazed doors and glazed openings within exterior doors shall be insulating-glass units with a minimum of one tempered pane (*either inner or outer pane*), **or**
  - o Glass block units, **or**
  - o Have a fire resistant rating of not less than 20 minutes with tested in accordance with ASTM E-2010 (*using the vertical furnace specified in ASTM E-119*) **or**
  - o Conform to the performance requirements of SFM 12-7A-2 (Exterior Windows)
- Performance of windows – glass is the most vulnerable part of the window.
  - o Tests conducted at the University of California, and in Australia, have shown that under wildland fire exposures, glass is the most vulnerable part of the window. A consumer could be largely ‘indifferent’ to frame type, and could therefore select based on other criteria (i.e., cost, energy, etc). The new code will require that tempered glass be used in all windows.

Frame failure



Glass failure



Horizontal separator on single and double-hung windows. (The horizontal separator in hung vinyl windows should be reinforced with an aluminum cross piece.)

- Further Clarification.
  - o The first two options for compliance are prescriptive. The California energy code has resulted in dual pane windows being the norm. Currently building code requires tempered glass for windows in or immediately adjacent to doors, and in windows that are 18” or less from a floor. Chapter 7A will require one of the panes in a dual pane window to be tempered. From the perspective of a wildfire exposure, the tempered glass pane should be the one on the outside, but the code says that the tempered glass could be either the inner or outer pane.
  - o The third option requires testing in a vertical furnace following a specified time-temperature regime. This test results in a largely radiant exposure. After 20 minutes, the exposure temperature would be about 1300 degrees F.
  - o The fourth option (SFM 12-7A-2) is a flame impingement exposure.
  - o This section does apply to windows in and exterior access doors to a garage.