

SKYLIGHTS

WILDFIRE RESEARCH FACT SHEET

Skylights can compromise a home's ability to survive a wildfire when precautions are not implemented to prevent them from being an entry point for embers and/or flames.

Construction Materials/Placement

During a wildfire, a skylight can be vulnerable if subjected to an extended radiant heat exposure, or to flames when embers have ignited vegetative debris on top of the skylight. Most guidance recommends using a flat glass skylight rather than a plastic dome style because the plastic is combustible. However, there are situations, based on the slope of the roof, where a flat glass could be more vulnerable.

Vegetative debris can more easily land and stay on a low-slope roof, leading to increased risks. As seen in **Photos 1 and 2** of a low-slope roof, debris is more likely to accumulate on top of a flat glass skylight, and less likely to accumulate on a plastic dome skylight. Typical flame temperatures resulting from a wind-blown ember ignition of the debris would be high enough to break even tempered glass, the type of glass commonly used as the outer pane in a flat glass skylight.

Steep-Slope Roofs

Flat skylights are less vulnerable on a steep-slope roof because vegetative debris is less likely to accumulate. A steep-slope roof will act more like an exterior wall in terms of its response to a radiant heat exposure. Because of this increased resistance of glass over

plastic to a radiant heat exposure, a glass skylight is a better choice on steep-slope roofs. The vulnerability of a domed skylight will depend on the potential for an extended radiant heat exposure, which in turn depends on the amount of vegetation and other combustibles near it (**Photo 3**).

Dual-Pane Glass Benefits

Newer skylights feature dual-pane systems, like multi-pane windows in an exterior wall. The outer pane uses tempered glass and the inner pane uses laminated safety glass. This type of skylight is less likely to fail.

Maintenance

Both domed and flat skylights have similar framing systems (bases). Each uses a metal flashing to protect the wood framing members from both moisture- and ember-related damage (**Photo 4**). This flashing helps the skylight survive when threatened, but should be maintained to avoid risks.

Prior to an Evacuation

Similar to windows, skylights that can open should be closed when a wildfire threatens. They also should incorporate a screen to resist the intrusion of embers in case the skylight happens to be left open (**Photo 5**).



Photo 1. Accumulation of vegetative debris on top of a glass-type skylight on a low-slope roof.



Photo 2. Minimal accumulation of vegetative debris accumulated on these dome-type skylights on this low-slope roof.



Photo 3. The vulnerability of skylights on a steep-slope roof will depend on the potential for an extended radiant heat exposure to the roof and skylight unit.



Photo 4. Metal flashing protects the framing members of a skylight from moisture, a direct ember ignition, or flames from ember-ignited vegetation debris.



Photo 5. Operable skylights should be closed when a wildfire threatens. Similar to windows, they should incorporate a screen to resist the intrusion of embers (also good for insects!).



FIREWISE USA®
RESIDENTS REDUCING WILDFIRE RISKS



AGOURA HILLS
FireSafe
COUNCIL