Boulder Compromise on PV Setbacks in 2012 International Fire Code

The 2012 International Fire Code adds provisions that restrict the placement of solar photovoltaic panels on roofs, including mandated setbacks to allow roof access to firefighters. These restrictions have given rise to significant concern in the solar industry, with installers worried that strict interpretation will make many rooftop solar installations uneconomical.

The provisions are intended to address fire safety concerns related to rooftop installations of PV systems and require a three-foot setback from the edge of most roof edges.

Colorado solar installer Namaste Solar analyzed 50 residential installations from 2012 in the City of Boulder. Of these, Namaste found 64% would violate the new 2012 IFC restrictions. Based on this, Namaste estimated that strict enforcement of the 2012 IFC could result in a 50% reduction in PV adoption in the City of Boulder.

To find an acceptable compromise, the Colorado Solar Energy Industries Association worked with the Boulder Chief Fire Marshal on code amendment language to protect firefighter access to roofs while not imposing such onerous restrictions.

The compromise language that appears below was approved as a code amendment in September by the city council. We believe it is worthy of consideration by jurisdictions across Colorado and in other states as well.

Here is the compromise language:

(18) Subsection 605.11.3.2.1 is repealed and reenacted to read:

605.11.3.2.1 Residential buildings with hip roof layouts. Panels/modules installed on residential buildings with hip roof layouts shall be located in a manner that provides a 3-foot-wide (914 mm) clear access pathway from the eave to the ridge on each roof slope where panels/modules are located.

Exceptions:

1. These requirements shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

2. These requirements shall not apply to roofs where each panel/module array area on the roof is 1,000 square feet (92.90 m^2) or less in

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size, no continuous section of panels/modules is larger than 150 feet in length or width, a clear access pathway of not less than 12-inch-width is provided along each side of all horizontal ridges, and a clear access pathway of not less than 30-inch-width is provided from the eave to the ridge of one roof slope where panels/modules are located.

3. These requirements shall not apply to roofs where each panel/ module array area on the roof is 1,000 square feet (92.90 m^2) or less in size, no continuous section of panels/modules is larger than 150 feet in length or width, a clear access pathway of not less than 12-inch-width is provided along each side of all horizontal ridges, and, where panels/ modules are to be placed on both sides of a hip, a clear access pathway of not less than 18-inch-width is provided along each side of such hip.

4. These requirements shall not apply to roofs where the total combined area of solar array does not exceed 33% as measured in plan view of the total roof area of the structure,

(19) Subsection 605.11.3.2.2 is repealed and reenacted to read:

605.11.3.2.2 Residential buildings with a single ridge. Panels/modules installed on residential buildings with a single ridge shall be located in a manner that provides two, 3-foot-wide (914 mm) clear access pathways from the eave to the ridge on each roof slope where panels/modules are located.

Exceptions:

1. This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

2. This requirement shall not apply to roofs where each panel/module array area on the roof is 1,000 square feet (92.90 m^2) or less in size, no continuous section of panels/modules is larger than 150 feet in length or width, and a clear access pathway of not less than 12-inch-width is provided along each side of the horizontal ridge provided that:

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a. The total combined area of solar array does not exceed 33% as measured in plan view of the total roof area of the structure; or

b. A 30-inch-wide clear access path is provided from the eave to the ridge of a roof slope where panels/modules are located.

(20) Subsection 605.11.3.2.3 is repealed and reenacted to read:

605.11.3.2.3 Residential buildings with roof hips and valleys. Panels/ modules installed on residential buildings with roof hips and valleys shall be located no closer than 18 inches (457 mm) to a hip or a valley where panels/ modules are to be placed on both sides of a hip or valley. Where panels are to be located on only one side of a hip or valley that is of equal length, the panels shall be permitted to be placed directly adjacent to the hip or valley. In addition, a 12-inch-wide clear access pathway shall be provided along each side of any horizontal ridge.

Exceptions:

1. This requirement shall not apply to roofs with slopes of two units vertical in 12 units horizontal (2:12) or less.

2. These requirements shall not apply to roofs where a 30-inch-wide clear access pathway is provided from the eave to the ridge as well as 12-inch-wide clear access pathways along each side of any horizontal ridge.

(21) A new Subsection 605.11.3.2.4 is repealed and reenacted to read:

605.11.3.2.4 Pathways. All access pathways required under this Section 605.11.3.2 shall be provided in a structurally strong location on the building capable of supporting the live load of fire fighters accessing the roof.

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