



COUNTY OF PLACER
Community Development Resource Agency

BUILDING

Administrative Policy
Roof mounted Solar
Class A requirements

TO: Building Division Staff and Public

From: Jeff Thomas, Supervising Building Inspector

Approved: Tim Wegner, Chief Building Official

Effective Date: February 1, 2015

ISSUE:

As of January 1, 2015, the State law requires that the installation of roof mounted Solar Photovoltaic Systems must be listed with a class A, B or C Fire Rating that matches the respective required Fire Rating of the roof covering. All Solar Photovoltaic Systems (panels, modules, racking and roof covering) must be tested and certified by a Nationally Recognized Test Lab (NRTL), per UL1703, and receive a Fire Classification Rating. All roof mounted solar photovoltaic systems in Placer County must have a Class A Fire Rating.

BACKGROUND/HISTORY:

Prior to January 1, 2015 Solar Photovoltaic Systems were not required to have a Fire Classification. In 2013 the State Fire Marshal proposed emergency changes that would require all roof mounted Solar Photovoltaic Systems to have a Fire Rating that equaled the required Fire Rating of the roof covering. This proposal was adopted by the Building Standards Commission with an implementation date of July 1, 2014. However, due to industry constraints and lack of available product and testing, the State Fire Marshal extended the effective date to January 1, 2015. During the previous year, Underwriters Laboratories worked with the State Fire Marshal and the Solar Industry to update the testing standards of UL1703. As testing began it was realized that testing and rating every module and every rack for a fire classification was impractical. Therefore, since a majority of modules have similar construction, the new UL 1703, revised May 2014, developed a system to "type" the module (currently 15 types). This meant the system could be rated with the specific racking and by type of module instead of manufacturer. Thus providing a system rating that would be more universal. This module typing allows module types to be interchangeable with different racking manufactures.

ANALYSIS:

Every roof mounted Solar Photovoltaic System must be tested and receive a letter or certificate of compliance from a NRTL which clearly indicates the racking and module type or specific module manufacturer and model (if not typed) that was used and the Fire Classification the system received. If a racking company used a typed module as part of their tested system, the module must also have a letter or certificate of compliance stating the module type. Any manufacturer may be used, provided their module has a certified type that is the same certified

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type used in the racking system's testing. If a specific non-typed module was used in their tested system, then only that specific module may be installed with that specific racking system.

POLICY:

All roof mounted Solar Photovoltaic Systems shall have a certificate of compliance issued by a Nationally Recognized Testing Lab. Currently the four approved Labs are, Underwriters Laboratory (UL), TUV Rheinland (TUV), Canadian Standards Association (CSA) and Intertek. The compliance letter must clearly depict, the racking used, the module type used (or module manufacturer and model number if not typed) and the Fire Classification of the system.

In an effort to verify compliance with the required Class A Fire Rating, please see the following plan review requirements:

- The Photovoltaic System shall be accompanied with a letter or certificate of compliance issued by one of the NRTL as noted above.
- The letter or certificate of compliance must note the racking system used and the module type* or module specifics (manufacture and model number if non-typed module**).
- Verify the letter or certificate of compliance was issued for the roof application noted in the certificate. For example, steep slope (greater than 2:12) or low slope (2:12 or less).
- Verify if the certification requires edge deflectors and if so, they are included and detailed in the submittal.
- The letter or certificate of compliance notes that the system received a Class A Fire Rating per UL 1703, as revised May 2014.

* If the Photovoltaic System was tested with a "typed" module, that module must also be accompanied by a letter or certificate of compliance (issued by a NRTL as noted above) which depicts the module type. Solar companies are then able to use a racking company's system and another company's module, provided the module type is the same as used in the test and the other module also has a compliance letter. For example, a racking company had its XY rack tested with a type II module and it received a Class A Rating and certificate. The type II module could be any certified type II module from any company. However, you could not replace the type II module for any other typed module i.e. type I, type III...type XV.

** If the Photovoltaic System was tested with a specific, non-typed module (specific manufacturer and model number), that exact module must be what is submitted and installed in the field. For example, a racking company had its XY rack tested with Company Q's non-typed module Z and it received a Class A Rating and certificate. The module Z does not need to be certified. However, you could not replace module Z with any other module, typed or not.

Note: Contractors will be required to submit a self-certification, certifying that the system as noted in the approved plans is what was installed in the field. This rationale is based on several factors: limited walking area and access around solar panels, steepness of some roofs and or roof types, such as tile. These issues make it difficult to verifying module type on a consistent basis.

Attachment: State Fire Marshal IB 14-011



California State Fire Marshal Information Bulletin 14-011

Issued: November 25, 2014

FIRE CLASSIFICATION FOR ROOF MOUNTED SOLAR PHOTOVOLTAIC SYSTEMS AND/OR PANEL MODULES – 2013 CALIFORNIA BUILDING STANDARDS CODE SUPPLEMENT EFFECTIVE JANUARY 1, 2015

The Office of the State Fire Marshal is issuing this Information Bulletin to address the use of photovoltaic solar systems and/or panel modules in areas outside the State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zones. The adoption of UL 1703 with revisions through October 25, 2013 and the Emergency Rulemaking that delayed the effective date to January 1, 2015 of the adoption were intended to focus on the areas that require Class A or Class B roofing (SRA and Very High Fire Hazard Severity Zones). Where Class A or Class B roofing is required, the photovoltaic solar system (photovoltaic panels with the rack support system) shall have a Class A or Class B rating, respectively.

Areas in California that only require a minimum Class C roofing due to statutory provision contained in Health and Safety Code 13132.7 should not be impacted by the early adoption of UL 1703. Those buildings and structures requiring Class C roofing should be able to have installed one of the following and meet the intent of the 2013 California Building Standards Code:

1. Photovoltaic panels and modules having a Class C rating under the previous version of UL 1703 (2002 edition with revisions through April 2008), or
2. Photovoltaic panels and modules having a Class C rating complying with UL 790 (2004 edition with revisions through October 2008), or
3. Photovoltaic systems having a minimum Class C rating under the most recent version of UL 1703 (2002 edition with revisions through October 2013).

Fire classification of photovoltaic solar systems and panels shall be marked with their fire classification rating, Class A, B, or C.

Questions or comments regarding this Information Bulletin should be directed to Division Chief Kevin Reinertson, Code Development and Analysis at (916) 327-4998, or by electronic mail to kevin.reinertson@fire.ca.gov.

For more information please visit our website <http://osfm.fire.ca.gov>