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# Test Verification of Conformity

In the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

<b>Applicant Name &amp; Address:</b>	IronRidge, Inc. 1495 Zephyr Ave. Hayward, CA 94544 USA
<b>Product Description:</b>	Flush Mount System with XR Rails.
<b>Ratings &amp; Principle Characteristics:</b>	<u>Fire Class Resistance Rating:</u> -Flush Mount (Symmetrical). Class A Fire Rated for Low Slope applications when using Type 1, 2 and 3, listed photovoltaic modules. Class A Fire Rated for Steep Slope applications with Type1, 2 and 3, listed photovoltaic modules. Tested with a 5" gap (distance between the bottom the module frame and the roof covering), per the standard this system can be installed at any gap allowed by the manufacturers installation instructions. No perimeter guarding is required. This rating is applicable with any IronRidge or 3'rd party roof anchor.
<b>Models:</b>	IronRidge Flush Mount with XR Rails
<b>Brand Name:</b>	IronRidge Flush Mount
<b>Relevant Standards:</b>	UL 2703 (Section 15.2 and 15.3) Standard for Safety Mounting Systems, Mounting Devices, Clamping/Retention Devices, and Ground Lugs for Use with Flat-Plate Photovoltaic Modules and Panels, First Edition dated Jan. 28, 2015 <b>Referencing</b> UL1703 Third Edition dated Nov. 18, 2014, (Section 31.2) Standard for Safety for Flat-Plate Photovoltaic Modules and Panels.
<b>Verification Issuing Office:</b>	Intertek Testing Services NA, Inc. 8431 Murphy Drive Middleton, WI 53562
<b>Date of Tests:</b>	08/27/2014 to 03/17/2015
<b>Test Report Number(s):</b>	101769343MID-001r1, 101769343MID-001a, 101915978MID-001 & 101999492MID-001ar1-cr1.

This verification is part of the full test report(s) and should be read in conjunction with them. This report does not automatically imply product certification.

**Completed by:** Chris Zimbrich  
**Title:** Technician II, Fire Resistance

**Reviewed by:** Chad Naggs  
**Title:** Technician I, Fire Resistance

**Signature:** 

**Signature:** 

**Date:** 05/25/2016

**Date:** 05/25/2016

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## Background

All roofing products are tested and classified for their ability to resist fire.

Recently, these fire resistance standards were expanded to include solar equipment as part of the roof system. Specifically, this requires the modules, mounting hardware and roof covering to be tested together as a system to ensure they achieve the same fire rating as the original roof covering.

These new requirements are being adopted throughout the country in 2016.

## IronRidge Certification

IronRidge was the first company to receive a Class A Fire Rating—the highest possible rating—from Intertek Group plc., a Nationally Recognized Testing Laboratory.

IronRidge Flush Mount and Tilt Mount Systems were tested on sloped and flat roofs in accordance with the new UL 1703 & UL 2703 test standards. The testing evaluated the system's ability to resist flame spread, burning material and structural damage to the roof.

Refer to the table below to determine the requirements for achieving a Class A Fire Rating on your next project.

## Fire Testing Process

### Test Setup

#### Solar Modules

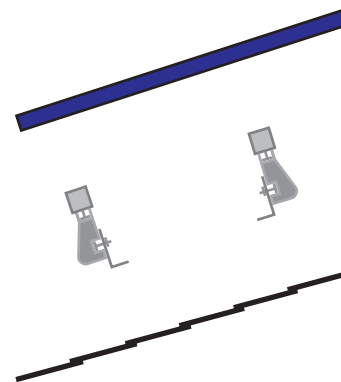
Solar modules are given a Type classification based on their materials and construction.

#### Mounting System

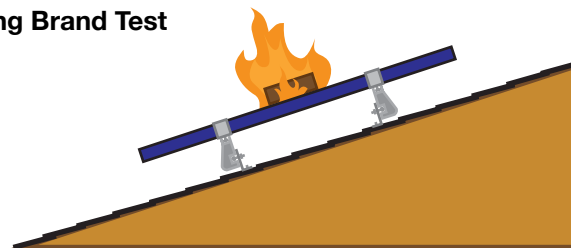
Mounting is tested as part of a system that includes type-tested modules and fire-rated roof covering.

#### Roof Covering

Roof covering products are given a Fire Class Rating of A, B or C based on their tested fire resistance.

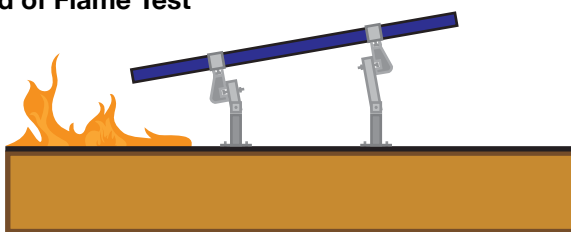


### Burning Brand Test





A burning wooden block is placed on module as a fan blows at 12 mph. Flame cannot be seen on underside of roof within 90 minutes.

### Spread of Flame Test



Flame at southern edge of roof is aimed up the roof as a fan blows at 12 mph. The flame cannot spread 6 feet or more in 10 minutes.

System	Roof Slope	Module	Fire Rating*
Flush Mount 	Any Slope	Type 1, 2, & 3	Class A
Tilt Mount 	≤ 6 Degrees	Type 1, 2, & 3	Class A

\*Class A rated PV systems can be installed on Class A, B, and C roofs.

## Frequently Asked Questions

### What is a “module type”?

The new UL1703 standard introduces the concept of a PV module type, based on 4 construction parameters and 2 fire performance parameters. The purpose of this classification is to certify mounting systems without needing to test it with every module.

### What roofing materials are covered?

All fire rated roofing materials are covered within this certification including composition shingle, clay and cement tile, metal, and membrane roofs.

### What if I have a Class C roof, but the jurisdiction now requires Class A or B?

Generally, older roofs will typically be “grandfathered in”, and will not require re-roofing. However, if 50% or more of the roofing material is replaced for the solar installation the code requirement will be enforced.

### Where is the new fire rating requirement code listed?

*2012 IBC: 1509.7.2 Fire classification. Rooftop mounted photovoltaic systems shall have the same fire classification as the roof assembly required by Section 1505.*

### Where is a Class A Fire Rating required?

The general requirement for roofing systems in the IBC refers to a Class C fire rating. Class A or B is required for areas such as Wildland Urban Interface areas (WUI) and for very high fire severity areas. Many of these areas are found throughout the western United States. California has the most Class A and B roof fire rating requirements, due to wild fire concerns.

### Are standard mid clamps covered?

Mid clamps and end clamps are considered part of the PV “system”, and are covered in the certification.

### What attachments and flashings are deemed compatible with Class A?

Attachments and their respective flashings are not constituents of the rating at this time. All code-compliant flashing methods are acceptable from a fire rating standpoint.

### What mounting height is acceptable?

UL fire testing was performed with a gap of 5”, which is considered worst case in the standard. Therefore, the rating is applicable to any module to roof gap.

### Am I required to install skirting to meet the fire code?

No, IronRidge achieved a Class A fire rating without any additional racking components.

### What determines Fire Classification?

Fire Classification refers to a fire-resistance rating system for roof covering materials based on their ability to withstand fire exposure.

*Class A - effective against severe fire exposure  
Class B - effective against moderate fire exposure  
Class C - effective against light fire exposure*

### What if the roof covering is not Class A rated?

The IronRidge Class A rating will not diminish the fire rating of the roof, whether Class A, B, or C.

### What tilts is the tilt mount system fire rated for?

The tilt mount system is rated for 1 degrees and up and any roof to module gap, or mounting height.

## More Resources



### Installation Manuals

Visit our website for manuals that include UL 2703 Listing and Fire Rating Classification.

[Go to IronRidge.com](http://www.ironridge.com)



### Engineering Certification Letters

We offer complete engineering resources and pre-stamped certification letters.

[Go to IronRidge.com](http://www.ironridge.com)