

ROOFS | FIRE CLASSIFICATION systems

Class A and Class 1 - What Do They Mean and How Do We Use Them

CLASS A, B, OR C

Class A, B or C are measures of the spread of flame on the exterior surface of a roof.

Fire test laboratories such as Underwriters Laboratories (UL) and FM Global (FM) test for flame spread on the exterior of the roof using either the ASTM E 108 standard test or the UL 790 standard test. The HIGHEST rating achieved by a tested roof is **Class A**, which is described as “effective against severe fire exposure.”

- The ASTM A 108 - Standard Test Methods for Fire Tests of Roof Coverings test is “designed to measure the surface spread of flame and the ability of the roof covering material or system to resist fire penetration from the exterior to the underside of a roof deck under the conditions of the exposure.”

These test methods “**do not** necessarily show the expected performance of roof coverings under **all actual fire conditions**” and “they **do not** determine the fire resistance when exposed to a fire originating **inside** the building to which the roof is installed.”

Chapter 15 of the CBC regulates the use of “Class A” roofs.

CLASS 1

“Class 1” designation is granted by Factory Mutual (FM) **only** if the entire roof assembly passes the FM 4470 test. The FM 4470 Approval Standard for Class 1 Roof Covers includes the following:

- Testing of the entire roofing assembly, including boards, flashings, etc.
- Testing for “internal fire, external fire, wind uplift resistance, foot traffic, corrosion resistance, impact resistance, and susceptibility to heat damage.”
- Testing for “Class 1” rating includes the same testing for exterior fire as “Class A” does, so then:

“Class 1” roof assemblies are listed by FM and can be searched on line at FM RoofNav. The CBC **does not** address Class “1” roof classification.

IN SUMMARY

“**Class A**” is a measure **only of the roof’s exterior surface performance when exposed to fire from above**.

“**Class 1**” is a measure **of the entire roof assembly performance when exposed to fire from above and fire from below, wind uplift, wear, and impact resistance**.

In both categories, the installed roof assemblies must have the same components and be installed in the same way as the assemblies tested.

RMW specifications include FM compliance to address the structural and fire performance for the entire roof assembly.

FM standards are required for insurance if the Owner wants to insure the roof.

All “Class 1” roofs are “Class A”
but not all
“Class A” roofs are “Class 1”

Remember, “**Roof Insurance**” is different from “**Roof Warranty**”
RMW always requires a roof warranty issued by the roof manufacturer, but roof insurance is the Owner’s option, same as with your car.

