

# ROOFS WITH CLASS

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# CLASS “A” ROOFS

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Class “A” roofs are tested **ONLY** from the **exterior** (from above)



- **CLASS A, B or C** is a measure of the spread of flame on the exterior surface of a roof.
  - Underwriters Laboratories (UL) tests roofs using the ASTM E 108 <sup>(1)</sup> standard test which 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...”.
  - Based on the results of the testing, UL assigns the roof a “Class A”, “Class B”, and “Class C” designation.

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- The best rating achieved by a roof tested in this manner (**only from above**) is “**CLASS A**”, which is described as “*effective against severe fire exposure.*”<sup>(1)</sup>
  - **HOWEVER**, “CLASS A” testing methods “do not illustrate the expected performance of roof coverings under all actual fire conditions” nor “do they determine the fire resistance when exposed to a fire originating inside the building.”



# CLASS “1” ROOFS

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Class “1” roofs are tested from the exterior  
AND from the interior (from above and from below)

- Factory Mutual tests roofs using the FM 4470 test.



- FM 4470 tests the complete roofing assembly, including substrate boards and insulation boards, for “internal fire, external fire, wind uplift resistance, foot traffic, corrosion resistance, impact resistance, and susceptibility to heat damage.”
- “CLASS 1” designation is granted by FM **only if** the entire roof assembly passes the FM 4470 test.



# CLASS "1" ROOFS

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- Since "CLASS 1" rating includes the same testing for exterior fire as "CLASS A" does, then:
  - ➔ • All "Class 1" roofs are "Class A",
  - but not all "Class "A" roofs are "class 1"
- CLASS 1 roof assemblies are listed by FM and can be searched on line by manufacturer and components at FM RoofNav.
  - Call the roof manufacturer with any questions regarding roof class; it is easier.



# SUMMARY

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- ➔ • **CLASS A** roofs are required by Code.
  - This designation only indicates that the roof passed a fire test that includes only testing of the roofing membrane (not the entire assembly) from the exterior.
- ➔ • **CLASS 1** roofs, in addition to passing the same fire test as Class A roofs, are also tested for fire originating in the building interior.
  - They also have to pass testing measuring structural performance and wear. Since this testing is more extensive, it is always included in our specs.

