

Trial by Fire: How Top Testing Agencies Play an Invaluable Role in the Fire Safety of Roofing Materials

Fire may not be the first thing on the mind of most shoppers considering various roofing materials, but it's an issue that all manufacturers must consider. Fire-retardant materials can play a crucial role in both preventing fires and limiting their damage.

Two major agencies – Factory Mutual (FM) Global Research and Underwriters Laboratories (UL) – rigorously test complete roof assemblies, not only for weather and wind resistance, but also for their ability to withstand and even prevent fires. The testing process is comprehensive and exposes roofing systems to incredibly challenging environments and threats.

These testing agencies help save property – and lives. Meeting their standards is a mark of a quality roofing system.

Why It Matters

Proper fire certification is critical if you want your roof to be safe, protective and long-lasting. But certification can also have an impact on insurability and insurance rates. FM-insured buildings, for example, must meet FM roofing standards.

Many building envelope and roofing professionals, designers, contractors and architects rely on FM's complimentary RoofNav tool, which provides up-to-date information on FM-approved materials and installation recommendations.

Similarly, UL provides an array of certifications for roof covering materials, ranking them under Class A, Class B or Class C. Many insurers either require or strongly prefer Class A systems.

Testing

Earning certification means passing the crucible of the testing agencies. Materials are not tested individually, but as part of a whole roofing system that includes the membrane, insulation and any other materials that would be used on an actual roof.

The roof sample must cure for at least 28 days, as it would in real life. Manufacturers work closely with testing labs to get material to the sites and correctly construct the roofs on-site for accurate testing.

While virtually all manufacturers have some sort of Class A assemblies for fire resistance, fire ratings are based upon the entire roofing composite and roof incline rather than just the membranes. Membranes, however, play a critical role, as you can see in this combustibility test.

In general, roofing materials must meet three requirements. They must:

- 1 **Resist an exterior fire and prevent flames from spreading to the interior of a building.**
- 2 **Not add fuel to an interior fire, causing it to spread.**
- 3 **Contain a fire to a particular room, even when the fire is above the ceiling.**

UL

UL details fire testing requirements within the UL 790 standard. The UL test exposes the roofing system to several types of fire and assigns classifications based on performance:

- Class A, which are effective against severe fire test exposure
- Class B, which are effective against moderate fire test exposure
- Class C, which are effective against light fire test exposure

Most roofing materials can achieve Class A status, though some materials are inherently more fire-resistant and some require constructions and formulations that help achieve Class A ratings. Here is a quick review of some widely used roofing materials:

- Polyvinyl chloride (PVC) roofs generally perform well in fire testing.
- Modified bitumen roofs can be formulated to Class A status, but as granules loosen and wash off over time, fire resistance can be compromised.
- TPO is not naturally fire-resistant, but can be formulated with fire-resistant chemicals to achieve Class A ratings.
- FiberTite performs well in combustibility testing and retains its key properties for decades. Here's a look at the FiberTite's approval process.

FM

FM details its unique testing [here](#), which also provides for A, B and C ratings, but adds a pass/fail interior fire-performance specification using the FM Approvals Construction Materials Calorimeter Test. Roofs passing this tough test get a rating of Class 1.

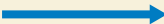
The Value of a Class A, Class 1 Roof

These ratings indicate more than fire prevention and the ability to withstand wind and storms. They speak to quality that protects year after year and exceeds expectations. The best roofs go beyond Class A and include fire-retardant capabilities. Look for a self-extinguishing membrane for peerless fire protection.


Long-Term Savings

A Class A roof offers a much lower long-term lifecycle cost. Use a manufacturer with the characteristics you need that also has decades of compelling track records. See if they can show roofs lasting well beyond their warranty period – even decades more. The uncompromising fire protection that provides peace of mind and superior insurability also helps avoid the costs of leaks, disruption from roofing projects, the environmental impact of a new roof and other expensive hassles.

Case Studies

After many years of service, we've seen FiberTite undergo some startling real-world testing over the years. Here's just one example of the material performing in the field, showing fire damage from below: 



The same roof from above, with the membrane unburned: 



Protect Your Investment

A great roof protects in every way possible. The rigorous testing roofing systems face allows you to trust their ability to perform and protect the valuable assets and priceless lives you're entrusting to them. Contact us to learn more about roof testing, systems and how to ensure your building is getting optimal coverage.

*Time for a
New Roof?*

**Schedule a Roof
Consultation Today!**

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