



EXTERIOR CLADDING SYSTEMS TESTING AND CERTIFICATION SERVICES



Fig.1 Fire event associated with combustible material on exterior cladding systems.

Due to fire events related to combustible cladding systems (Fig. 1), many key stakeholders, including building owners and Authorities Having Jurisdiction (AHJs), have lost confidence in installation of these systems. By going through the rigorous, scientific-based test protocols of an FM Approvals certification, manufacturers can instill confidence and address the concerns that building owners and regulators have related to the fire risks of these products.

Differentiate your product against competition. With the frequency and severity of natural catastrophes increasing due to climate change, climate resiliency of a building becomes an increasingly important topic. In addition to evaluating fire performance of the exterior cladding systems, FM Approvals evaluation standard FM 4411 *Examination Standard for Cavity Wall Systems* requires the systems to be tested against wind, hail and fastener corrosion resistance helping manufacturers demonstrate climate resiliency through third party certification.

FM Diamond. The FM certification mark (the FM Diamond) is a trusted mark by building owners, regulators, designers, AHJs, and insurance providers on a global basis. Products marked FM APPROVED are recognized to have superior quality and are evaluated with the highest level of technical integrity using globally consistent, scientific-based performance standards.

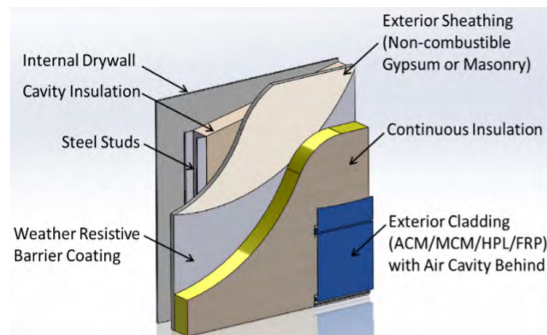


Fig. 2 Illustration of an example of a typical exterior cladding assembly

Systems certification. All FM APPROVED exterior cladding systems (Fig. 2) are tested and certified as a system. Verifying the performance of the entire cladding assembly is the only way to ensure the system will perform as expected.



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Performance of individual components may not determine how the assembly will behave once the components are put together. FM Approvals certified system are listed in the APPROVAL GUIDE, a free-of-charge online resource (approvalguide.com). Here, building owners, regulators, designers, AHJs and insurance providers around the world have access to all the products certified by FM Approvals.



Fig. 3 “Code-compliant” cladding system failing 4.9m parallel panel test reaching peak heat release rate well in excess of 6000kW.

SCIENTIFIC-BASED TESTING METHODOLOGIES ENSURING SYSTEM PERFORMANCE FOR ACTUAL INSTALLATIONS

Rigorous evaluation through fire exposure to the cavity of the cladding systems. The 4.9m High Parallel Panel fire test, Fig.3 is used to evaluate the fire performance of the cladding system under FM 4411. The peak heat release rate of the test is ~100kW/m² which is representative of a realistic façade fire scenario and is considerably higher than other test methodologies seen in



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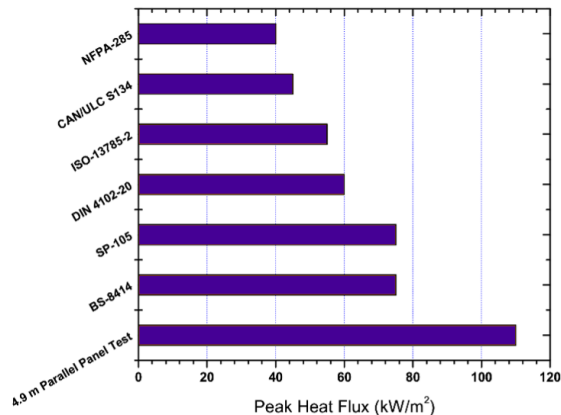


Fig. 4 Comparison of peak heat flux for various large-scale façade fire tests

different parts of the world (Fig. 4). Using a propane burner as the fire source and heat release rate as test criteria, the parallel panel fire test is more objective and repeatable than other test methodologies. Fire evaluation consists of exposing the exterior and cavity space to fires. Cavity air space fires are a risk not addressed by test methodologies specified in different building codes.

Evaluated for climate resiliency. Products certified to FM 4411 have been evaluated for performance against wind and hail events as well as fire. Through test exposure to static and cyclic air pressure differentials, the systems are given a wind rating which can help manufacturers demonstrate the suitability of their system to be applied to buildings in different parts of the world. Similarly, a hail resistance rating is given to systems to help manufacturers demonstrate climate resiliency through the system’s ability to withstand hailstorms.

Ongoing performance and quality. Manufacturing locations of all FM Approved exterior cladding systems are audited to ensure the systems being manufactured are identical to those that were tested following reviewed, acceptable quality procedures. In addition, all formulated products are required to undergo periodic sampling and testing to ensure that the chemical composition of those products has not changed since the systems were last evaluated.

Contact us to learn more about the benefits of FM Approvals certification by emailing us at information@fmapprovals.com or by calling your local FM Approvals contact found at fmapprovals.com.