



How Fiberglass, Rock and Slag Wool Can be Used to Reduce NFPA EFFECT Tool Risk Rating and Costs

Insulation Institute[™]
— KNOWLEDGE. LEADERSHIP. CONFIDENCE. —



Combustible Cladding

Exterior wall façade systems are used around the world to enhance building appearance and improve overall performance. While there are benefits to such retrofits, recent increases in fast-moving fires involving combustible exterior cladding on high-rise buildings have also highlighted some of the dangers.

In response, the National Fire Protection Association (NFPA) has developed **EFFECT™ (Exterior Façade Fire Evaluation Comparison Tool)** to help designers and architects navigate the code requirements for exterior wall assemblies containing combustible components. The tool can be used in any geographic area and currently applies to residential and commercial high-rise buildings that are over 60 feet high such as apartments, hotels, and offices.

How EFFECT Works

The NFPA EFFECT tool is designed to help building owners, facility managers, and authorities having jurisdiction (AHJ), assess risk in their high-rise building inventory with combustible façades.

The building, façade, and impact of potential ignition sources such as fire spreading from inside the building, or fire stemming from a vehicle, trash container, or balcony outside are all considered in a two-tiered risk assessment process:

- Tier 1 requires the AHJ, building owner, or facility manager to answer questions related to combustibility and the choice of insulation and façade cladding products; the presence of sprinklers; potential ignition sources; and the type of alarm system.
- Tier 2 requires authorities to complete a deeper fire risk assessment evaluation of those buildings deemed at risk in Tier 1. This assessment can include onsite inspection and laboratory testing.





Fiberglass, Rock and Slag Wool's Role in EFFECT

The first question (Q1) in the tool asks whether the insulation in the building façade is made of “a combustible material.” If it is, the tool acknowledges that this (along with the cladding and other sources of combustible materials) will be a potential source of fuel in an ambient fire condition.

The tool also recognizes that a building's façade system is a complete assembly, which includes the cladding, insulation, weather resistive barriers, and other components of the exterior wall. Selecting fiberglass or rock and slag wool as your choice leads to a lower risk assessment because as fire-resistant products, these materials contribute much less fuel to an ambient fire and do not ignite when exposed to flames. Buildings deemed Trivial/Tolerable in Tier 1A do not need further assessment unless the AHJ has concerns about the accuracy of the feedback from the Facilities Managers.

Buildings deemed Trivial/Tolerable in Tier 1A but Moderate-Intolerable in Tier 1B should be assessed. Selecting fiberglass or rock and slag wool is acknowledged to significantly reduce the fire hazard posed by a building façade system, and can lead to building owners receiving a low enough final score to mitigate the need for a Tier 2 assessment and potentially very costly mitigation measures that would be needed to upgrade their buildings.

Tier 1A, Q1

Question 1:

- Is the insulation provided within the building façade system made of a combustible material, e.g. foam insulation?

Commentary:

- Mineral wool and glass wools are made up of fibers that are scratchy and sharp to the touch. Foam is cellular and smooth.
- Mineral insulation does not pose a fire hazard but any type of foam will burn.
- Answer “yes” if the insulation is a foam.
- Answer “no” if the insulation is mineral or glass wool.
- Answer “no” if there is no insulation.



Courtesy of Knauf Insulation



Tier 1, Process A - Insulation
User's Guide

Variables assessed in Tier 1 and 2 in Process A



NFPA.ORG © National Fire Protection Association. All rights reserved.

Tier 1A of the tool lists four risk factors:

1. Insulation as a potential fuel source.
2. Cladding as a potential fuel source.
3. Façade ignition sources.
4. Vertical connectivity in buildings.



Avoiding Costly Mitigation

Costly mitigation can be a consequence of not using fiberglass or rock and slag wool when the building is planned. There are a range of mitigation measures recommended by the NFPA EFFECT tool after Tier 2. Building management procedures can be implemented, occupancy of terraces can be eliminated, and outdoor grills and other similar ignition risks from balconies can be prohibited. Upgrading fire alarm or sprinkler systems, and even the replacement of the combustible cladding and/or insulation system in its entirety are also options.

As demonstrated by the NFPA EFFECT tool, installing fiberglass or rock and slag wool insulation on your new building, or during energy retrofits, can greatly reduce the risk of fire hazard and the potential for costly repairs and disruptions to tenants in the event of a fire.

This summary is offered for informational purposes only. It does not purport to be an exhaustive analysis of code changes or provide advice that will ensure guaranteed compliance with any energy or fire code provision. Please consult with local authorities before finalizing your installation plans.

About NAIMA

NAIMA is the association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool, and slag wool insulation, and to encourage the safe production and use of these materials.

Through the Insulation Institute™, we leverage the collective insulation expertise of our organization and our members to empower homeowners and professionals to make informed insulation choices. Our mission is to enable a more comfortable, energy-efficient and sustainable future through insulation — and we are constantly working with building professionals, homeowners, government agencies, and public interest, energy and environmental groups to realize that vision.

Insulation Institute™

KNOWLEDGE. LEADERSHIP. CONFIDENCE.

NAIMA

11 CANAL CENTER PLAZA, SUITE 103 | ALEXANDRIA, VA 22314 | P: 703-684-0084 | F: 703-684-0427

PUB. NO. N097 8/19

insulationinstitute.org