

FOCUS ON FIRE SAFETY OF FAÇADE CLADDING: THE PHILOSOPHY BEHIND THE LEGISLATION

Modern architecture demands façades that are not only visually impressive and energy efficient, but also exceptionally safe.

And when it comes to façade safety, one subject has become increasingly important worldwide: **Fire safety in ventilated façade systems.**

But to truly understand modern façade fire regulations, it is important to first understand the philosophy behind the legislation itself.

No building is completely fireproof

The reality is simple:

No building can ever be made 100% fireproof.

For that reason, fire legislation is not designed to eliminate fire risk entirely.

Instead, its primary objective is to protect human life.

The key goal of modern fire regulations is to ensure that, in the event of a fire:

- occupants have enough time to evacuate safely
- emergency services can respond effectively
- fire spread is slowed as much as possible
- structural damage is limited

This philosophy forms the foundation of modern façade fire engineering.

Compartmentation: controlling fire spread

One of the most important principles in fire safety design is **compartmentation**.

Buildings are divided into separate fire-resistant zones using:

- fire-resistant walls
- floors
- barriers
- cavity closures

The objective is to prevent fire from rapidly spreading from one area to another.

This becomes especially critical in ventilated façade constructions.

Why ventilated façades require special fire attention

Ventilated façade systems contain an air cavity between the structural wall and the external cladding.

While this cavity provides major benefits such as:

- moisture control
- thermal performance
- energy efficiency
- façade durability

it can also create a pathway for rapid vertical fire spread if not properly engineered.

A continuous cavity may allow flames and hot gases to move quickly upward through the façade, potentially affecting multiple floors almost simultaneously.

This is exactly why fire legislation imposes increasingly strict requirements on ventilated façade systems — particularly for medium-rise and high-rise buildings.

Higher buildings demand stricter fire protection

In taller buildings, evacuation simply takes more time.

This is even more critical in buildings where occupants may have limited mobility, such as:

- hospitals
- residential care facilities
- hotels
- residential towers

The longer evacuation time means that façade systems must provide greater resistance against rapid fire propagation.

As a result, legislation is required:

- cavity barriers
- horizontal fire stops
- non-combustible materials
- carefully engineered façade detailing

to slow or stop vertical fire spread within the façade cavity.

The importance of cavity barriers and façade interruptions

One of the most effective ways to limit fire propagation in ventilated façades is by interrupting the cavity continuity.

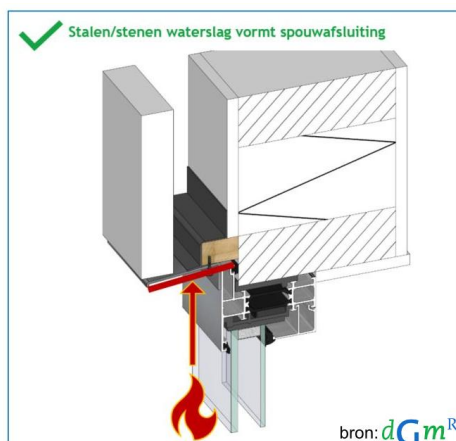
This can be achieved using:

- continuous horizontal façade interruptions
- cavity barriers
- fire-resistant closures
- compartmentation detailing

These elements help prevent fire and heat from moving unrestricted through the façade cavity.

Without proper cavity interruption, a fire can spread vertically at extremely high speed.

Critical detailing above windows



Attention must also be paid to the detailing above window frames.

During an external fire, flames often exit through broken windows and directly attack the façade above. If the cavity above the window remains open or contains combustible materials, fire can rapidly enter the upper cavity section.

That is why cavity closures above windows should always be constructed using:

- non-combustible materials
- non-melting components
- properly engineered fire barriers

This small but critical detail can significantly improve façade fire safety performance.

Fire-safe façades require a total system approach

True façade fire safety is never achieved by a single product alone.

It depends on the intelligent integration of:

- cladding materials
- insulation systems
- support structures
- cavity barriers
- façade detailing
- and fixing technologies

At TWEHA®, we understand that modern façade systems require a complete engineering approach where performance, durability, aesthetics, and fire safety work together.

Because successful façade design is not only about creating beautiful buildings —

It is about creating buildings that protect lives.

TWEHA®, 2026