

GLOBAL CHALLENGE: THE REMEDIATION OF COMBUSTIBLE FAÇADE CLADDING

The remediation of existing buildings containing combustible façade cladding is one of the most significant challenges facing the global façade industry today.

In many countries, large numbers of occupied residential, commercial and public buildings are still being assessed for potential fire-safety risks. Where existing façade systems no longer meet current safety expectations, extensive remediation programmes may be required.

Replacing combustible cladding is technically possible. However, the process is rarely simple. It requires a careful assessment of the complete façade system, a well-developed remediation strategy and close cooperation between building owners, authorities, fire engineers, façade specialists, contractors and product suppliers.

The scale, cost and complexity of these projects demonstrate an important principle: Preventing façade-safety problems during design and construction will always be more efficient and less costly than correcting them afterwards.

Fire Safety Is System Responsibility

The fire performance of a façade cannot be determined by looking at one individual product in isolation.

A ventilated façade is a complete system consisting of multiple components, including:

- the external cladding material;
- insulation;
- membranes;
- cavity barriers and fire stops;
- the supporting structure;
- mechanical or bonded fixing systems;
- joints, openings and edge details;
- connections around windows, doors and floor slabs.

Each component may influence how fire and smoke develop and spread through the façade. For this reason, a façade should always be assessed as a complete construction. A cladding panel with a favorable fire classification does not automatically guarantee that the finished façade system will perform safely. The combination of materials, cavity geometry, detailing and workmanship is equally important.

Why Façade Remediation Is So Complex

A remediation project normally begins with a detailed investigation of the existing building.

This may include reviewing original drawings and specifications, opening sections of the façade and identifying materials that may not be visible from the outside. In older buildings, the actual construction may differ considerably from the original design documentation.

The assessment may need to determine:

- which cladding products and core materials were installed;
- which insulation and membranes are present;
- whether cavity barriers were installed correctly;
- how panels are fixed to the supporting structure;
- whether combustible materials are exposed within the cavity;
- whether existing detailing allows fire or smoke to bypass compartmentation;
- whether corrosion, moisture damage or deformation has affected the substructure.

The results of this investigation determine whether limited local improvements are sufficient or whether the complete façade must be removed and replaced.

Occupied Buildings Create Additional Challenges

Many buildings requiring façade remediation remain occupied throughout the process. This creates significant practical and organizational challenges. Residents, employees and building users may experience noise, dust, restricted access and reduced daylight. Scaffolding and temporary safety measures may remain in place for long periods.

The contractor must also consider:

- safe access around entrances and escape routes;
- temporary protection against weather exposure;
- working around occupied apartments or offices;
- the sequencing of removal and installation;
- the prevention of falling materials;
- fire-safety precautions during construction;
- communication with building users and stakeholders.

Remediation is therefore not simply a matter of replacing one panel with another. It is a complex building operation requiring careful planning and technical control.

Hidden Defects Are Often Discovered During Removal

Once the existing cladding is removed, additional defects may become visible. These can include damaged insulation, missing cavity barriers, corroded profiles, incorrectly installed membranes, inadequate fasteners or uneven supporting structures. Such findings may significantly expand the original scope of the project.

A successful remediation strategy should therefore include sufficient technical investigation, realistic contingency planning and clear decision-making procedures. Designs should allow for the possibility that parts of the supporting structure may also require repair or replacement.

Replacement Materials Must Be Selected Carefully

The selection of a new cladding system should not be based solely on appearance or purchase price.

The proposed system must be suitable for the building type, building height, exposure conditions, supporting structure and applicable fire-safety requirements.

Important considerations include:

- the fire classification of the individual components;
- the tested or assessed performance of the complete façade build-up;
- the suitability of the insulation and cavity barriers;
- the durability of the substructure;
- the resistance to wind loads and impact;
- moisture management and ventilation;
- expected thermal movement;
- the fixing or bonding method;
- inspection and maintenance requirements;
- local building regulations and project-specific approvals.

A replacement façade should solve the existing problem without introducing new technical risks.

The Supporting Structure Must Be Part of the Assessment

In many remediation projects, the focus is placed primarily on the visible cladding panel.

However, supporting structure is equally important.

Profiles may have been exposed to moisture, corrosion or high temperatures. Their spacing and load-bearing capacity may not be suitable for the proposed replacement panels.

Changing the panel material can also change:

- the dead weight of the façade;
- the wind-load distribution;
- the thermal movement;
- the fixing pattern;
- the loads acting on brackets and anchors;
- the required profile dimensions.

The existing substructure should therefore never be reused automatically. Its condition and structural suitability must be verified before the new façade system is installed.

Bonded Façade Systems in Remediation Projects

Bonded fixing systems can offer important advantages during façade remediation.

A properly designed bonded system can provide a clean appearance without visible mechanical fixings. It can also distribute loads continuously along the supporting profiles, rather than concentrating them around individual point fixings.

Other potential benefits include:

- greater architectural freedom;
- reduced risk of damage caused by drilling into brittle panels;
- accommodation of limited differential movement;
- even stress distribution;
- efficient installation;
- a consistent façade appearance.

However, a bonded façade system must be treated as an engineered solution.

The adhesive, panel, pretreatment, supporting profile, bead geometry and installation conditions must be compatible. Project-specific testing may be required to confirm durable adhesion to both the cladding panel and the supporting structure.

A high-quality adhesive product alone is not sufficient. Correct design, substrate preparation and application remain essential.

Remediation Requires Traceable Quality Control

Because façade remediation projects are often safety-critical, every stage of the work should be documented.

A suitable quality control system may include:

- verification of delivered materials;
- recording batch numbers and expiry dates;
- confirmation of substrate preparation;
- monitoring temperature, humidity and dew point;
- checking adhesive-bead dimensions;
- inspection of panel positioning and compression;
- photographic records;
- adhesion testing;
- sign-off of cavity barriers and fire stops;
- traceable inspection reports.

This documentation provides evidence that the approved design has been correctly translated into the final construction.

It also supports future maintenance, inspection and building-management activities.

Prevention Is More Effective Than Remediation

The high cost of current remediation programs provides a clear lesson for future projects. Façade safety should be considered from the earliest design stage. Materials should not be selected independently, and technical decisions should not be postponed until installation begins.

Early coordination makes it possible to:

- select compatible and appropriate materials;
- verify regulatory requirements;
- assess fire performance at system level;
- design correct cavity barriers and details;
- confirm structural load transfer;

- perform necessary adhesion and compatibility testing;
- establish a realistic installation and inspection plan.

The cost of careful engineering and testing is small compared with the financial and social impact of removing and rebuilding an unsafe façade.

Technical Knowledge Creates Commercial Value

For distributors, façade contractors and system suppliers, remediation programs create both responsibility and opportunity.

Customers need more than product availability. They need suppliers who understand the interaction between fire safety, structural performance, material compatibility, installation and long-term durability.

Providing technical guidance helps customers make better decisions and reduces the risk of errors during design and execution.

This support can include:

- assistance with system selection;
- evaluation of substrates and cladding materials;
- project-specific adhesion testing;
- installation guidance;
- technical training;
- preparation of application procedures;
- support during trials and site inspections.

The supplier who can combine products with knowledge becomes a more valuable project partner.

From Product Supplier to Technical Partner

The façade industry is changing. Building owners, designers and contractors increasingly expect clear technical evidence and project-specific support.

This means that successful remediation is not achieved by simply supplying a replacement panel, insulation product, fixing or adhesive.

It requires cooperation between specialists who understand the complete façade system. At TWEHA, we support distributors, façade specialists and project teams with bonded fixing solutions, practical application guidance, compatibility testing and technical knowledge for ventilated façade systems.

Our objective is not only to provide an adhesive product. It is to help create façade systems that are safe, durable and correctly installed.

A Global Challenge That Requires Shared Knowledge

Combustible-cladding remediation will remain an important issue in many markets for years to come.

Through organizations such as ACPIA, the façade industry can share experience, improve awareness and promote informed decision-making around façade fire safety. Every complete remediation project offers lessons for future design, product selection and quality control.

The question is therefore not only how existing façades can be repaired. The more important question is how industry can prevent the same problems from being designed and built again.

What is the current situation in your country? Are large-scale façade-remediation programs underway, and what lessons can the international façade industry learn from them?

TWEHA®, 2026