

I. Typical Safety Incidents



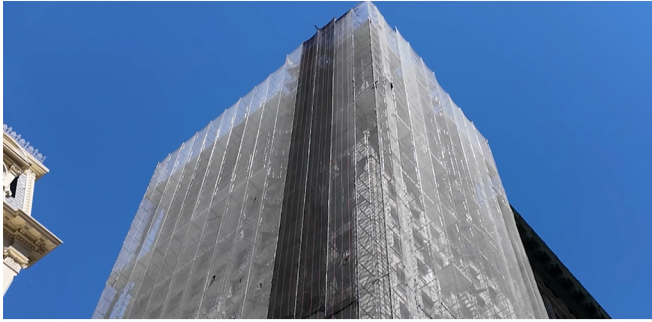
Seoul, South Korea – Sampoong Department Store

Cause: Short-slot T-type anchors were used. Over time, building settlement, wind vibration, and corrosion weakened the fixings, leading to large areas of stone panels falling off.



Hamburg, Germany – Commercial Center

Cause: Butterfly-type anchors were used without seismic design. Rainwater caused corrosion, and stress built up at the stone slots, leading to cracking and collapse.



New York, USA – Midtown Manhattan

Cause: Steel anchors without anti-fall design. Severe corrosion, cracking at fixing points, and aging sealant with water leakage caused panel detachment.

II. How to Build a Safe Stone Facade?

A safe stone Facade =
Compliant Materials + Scientific Design + Proper Installation + Regular Maintenance

1. Compliant Materials



Stone
Meet required thickness and strength standards.

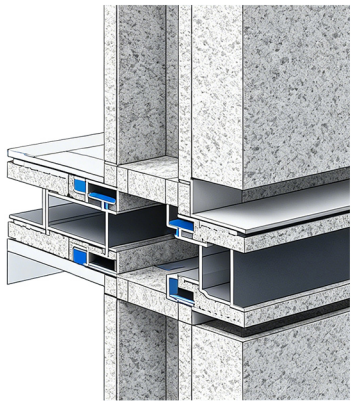


Metal Components
Use hot-dip galvanized or corrosion-resistant materials.

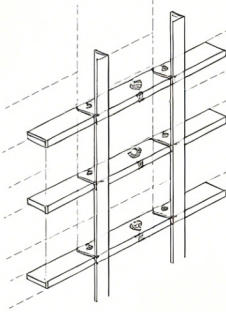
2. Scientific Design

Load Calculation
Consider wind load, self-weight, seismic forces, and thermal stress.

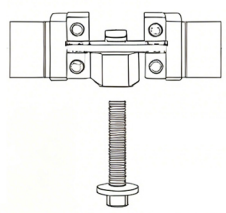
Structural Design
Proper spacing of the subframe and rational anchor layout; each panel is independently supported to avoid interaction or progressive failure.



3. Safe Installation



Subframe Installation
Ensure vertical and horizontal alignment meets tolerance; connections are firmly fixed and properly protected against corrosion.

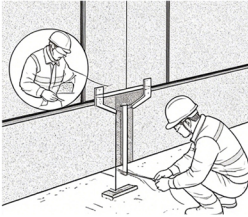


Bracket Installation
For short-slot systems, use split L-type or SE anchors (T-type and butterfly anchors are not allowed); undercut anchors must be installed correctly with proper expansion.

4. Maintenance



Regular Inspection
Check for anchor corrosion, aging sealant joints, and stone cracking.



Timely Repair
Replace deteriorated sealants and corroded anchors; repair or replace damaged stone

III. Common Installation Methods for Stone facade

1. Short-Slot System



Advantages

- (1) Moderate cost, easy installation, short construction time, and simple maintenance;
- (2) Suitable for low-rise buildings (below 24m), interiors, and lobby walls;
- (3) Flexible subframe, easy on-site adjustment.

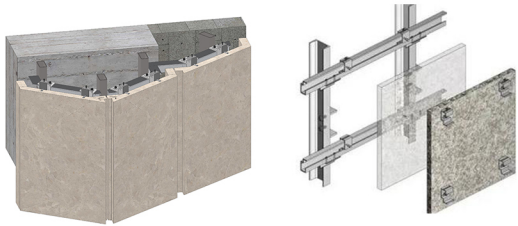
Common Materials & Accessories



Disadvantages

- (1) Slotting weakens the stone, with risk of stress concentration;
- (2) Not suitable for high-rise, typhoon-prone, or high seismic areas;
- (3) Not ideal for large-format panels.

2. Undercut Anchor System



Advantages

- (1) Post-drilled mechanical anchoring without weakening the stone; uniform load distribution;
- (2) Independent panels with strong seismic, wind, and anti-fall performance;
- (3) Suitable for high-rise, large panels, irregular shapes, and coastal environments.

Common Materials & Accessories



Disadvantages

- (1) Higher cost and longer installation time;
- (2) Requires high precision in fabrication and skilled installation.

IV. Safety Testing



1. Pull-Out Testing (Anchors & Fixings)
Post-installed chemical anchors, metal fixings, and undercut anchors must be randomly tested on site after delivery and installation; verify anchorage strength and ultimate pull-out capacity.

2. Sealant Performance Testing
Weatherproof and structural sealants must have factory test reports; retesting should confirm adhesion, aging resistance, movement capability, waterproofing, and UV resistance.