



# Section F External Finishing

Logicwall® External Design Considerations, Movement Joints, Waterproofing, Slab Junctions, Flashings, Windows, Finishings, Cladding Systems, Durability.

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# F1. External Design Considerations

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## Introduction

AFS Logicwall® panels are faced with 6mm fibre cement sheets which, at the completion of the construction process, provide the wall face and substrate for applied finishes and decorating.

The fibre cement sheets contribute to the overall durability of the product.

The final finish of AFS Logicwall® is influenced by factors such as movement and sheet surface joints, correct alignment of panels at installation stage, joint setting methods and applied finishing system.

There are a number of methods for ensuring that the finished AFS Logicwall® meets the user expectations. For best results these should be considered in the planning stages of the project and be clearly set out in specifications.

It is essential for the designers and builders to determine the level of finish required before construction begins otherwise it may not be possible to attain the desired finish level without extensive corrective measures.

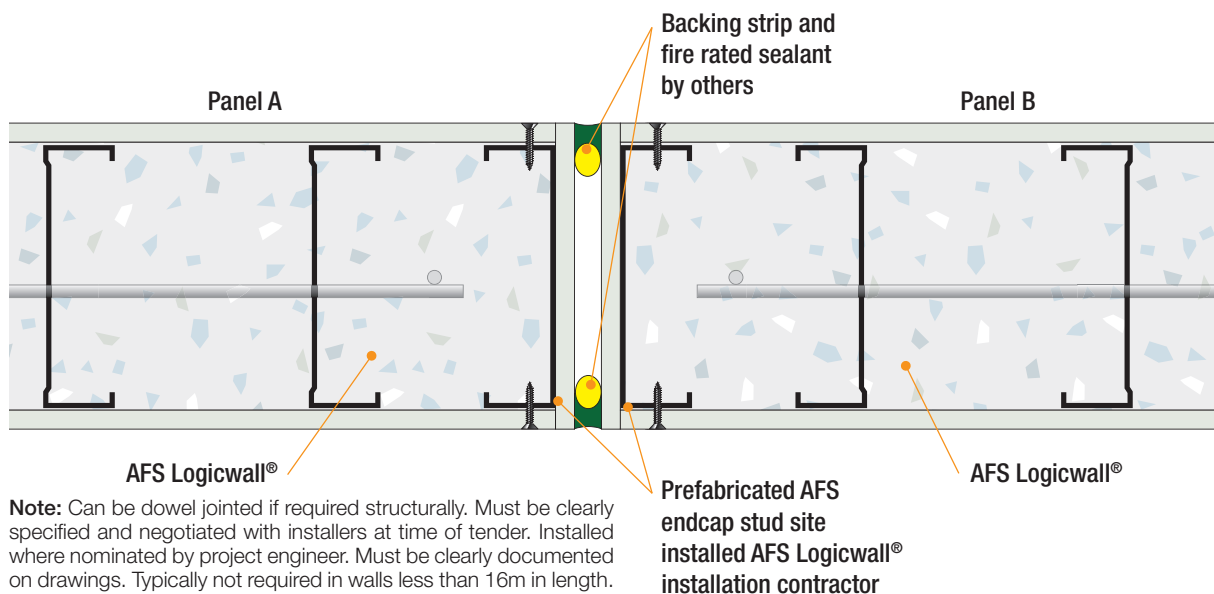
For external wall application AFS Logicwall® can accommodate a range of external finishing solutions as set out in Finishing and Cladding Systems in this section.

## Movement Joints

The structural concrete wall effectively has control joints at each stud so no additional crack control joints are necessary. Full depth "movement joints" may be required depending on the geometry of the structure and other considerations such as thermal loads, exposure or building joints. In general "movement joints" would not be required for walls less than 16m

long. Structural "movement joints" will be placed in locations nominated by structural engineer and must be documented on structural drawings. These will be installed at construction stage by the AFS Logicwall® installation contractor. The following method is recommended.

**Fig F1: Logicwall® Movement joint**



## Waterproofing

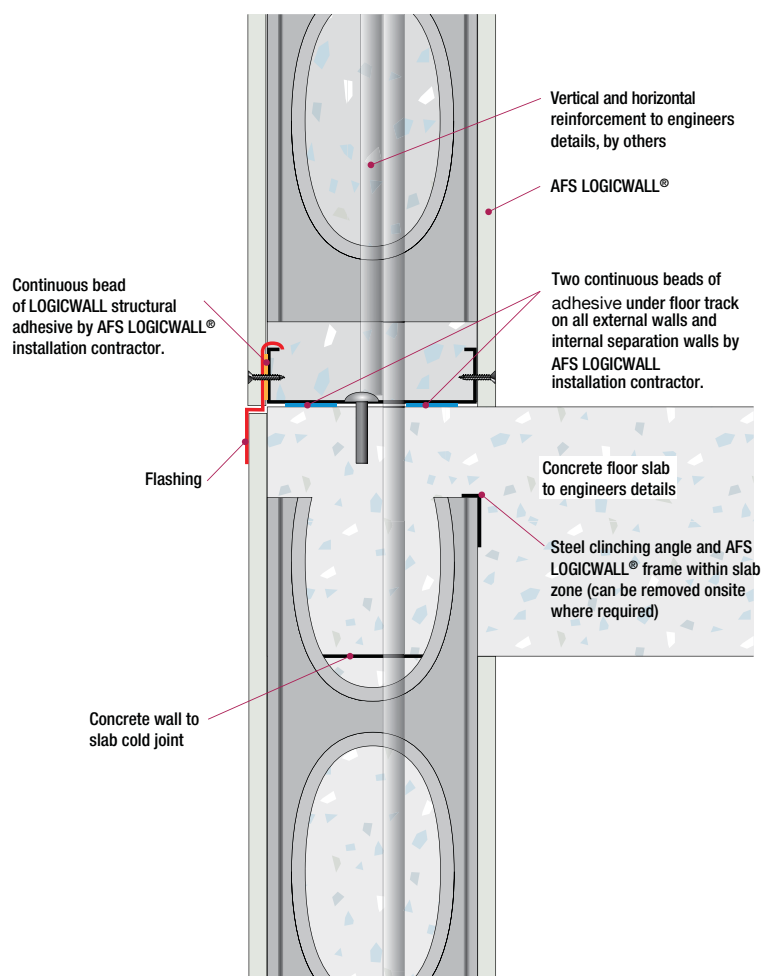
For any external façade design applicable to a building, it is essential that the system adopted is capable of withstanding the various environmental conditions which the façade is subject to during its life. In particular the prevention of water ingress into the building is critical.

AFS Logicwall® as an external façade, with an applied waterproofing coating performs as a successful barrier to water ingress and has been tried and proven on numerous buildings, many of which are in coastal locations. The system chiefly relies upon the following for waterproofing:

1. Adoption of horizontal slab junction details as recommended by AFS.
2. Appropriate location of flashings, especially to cap exposed parapet walls typically located on the top level of buildings.
3. Correct application of a quality external waterproofing coating system to supplier's specifications.
4. The water resistance of AFS Logicwall® itself, incorporating fibre cement facing sheets with water block technology properties.

## Horizontal Slab Junctions

**Fig F2: Unfinished Boundary Wall (adjacent to neighbouring building)**



## Horizontal Slab Junctions (continued)

Fig F3: Cover Strip Detail

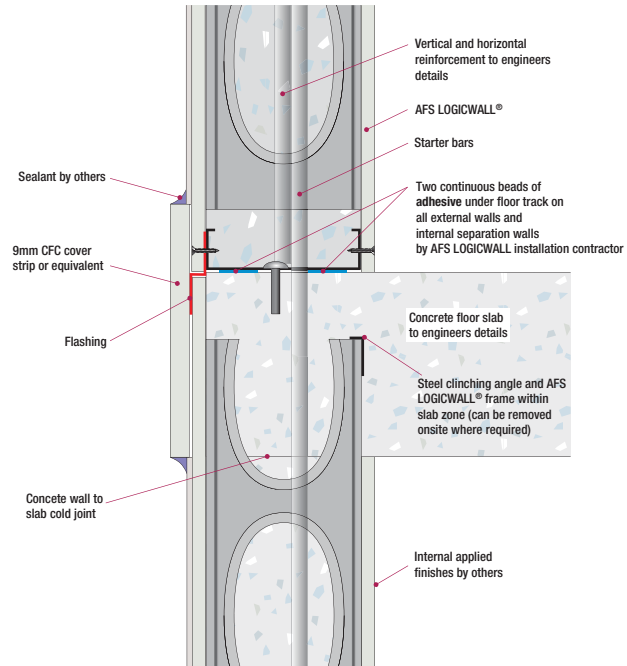
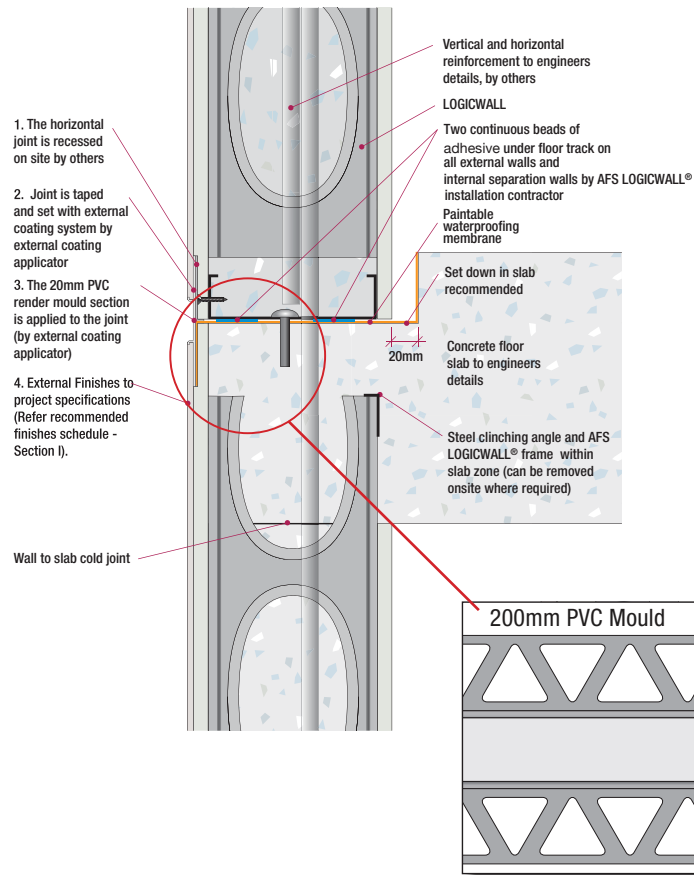
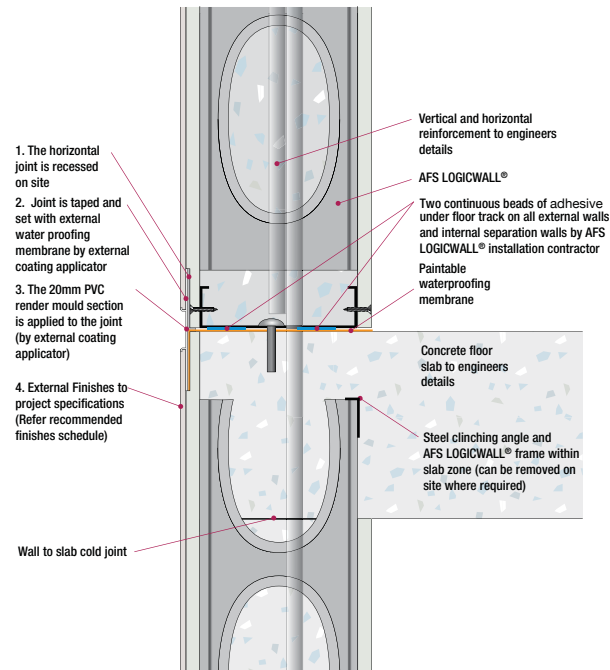


Fig F4: Cover Strip Detail

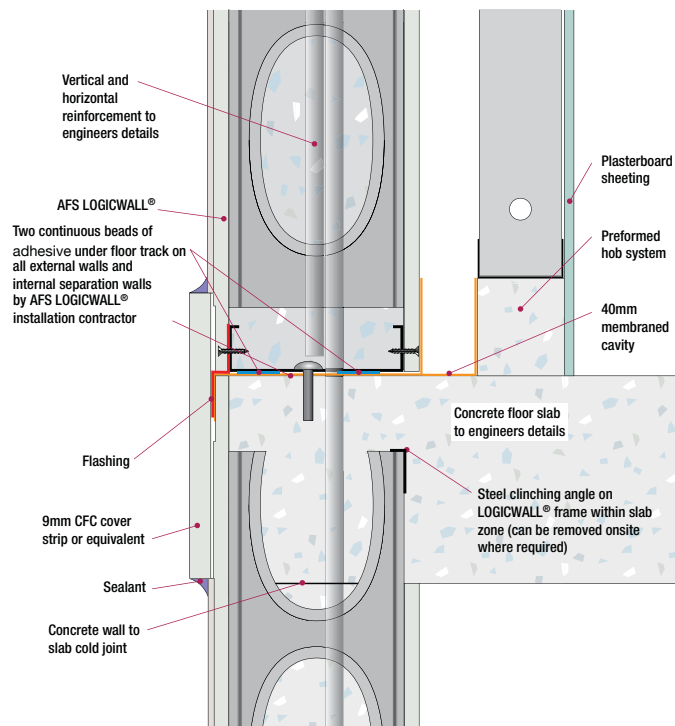


## Horizontal Slab Junctions (continued)

**Fig F5: Flexible Extrusion Details- Horizontal Express Joint with Waterproofing on Flat Plate Slab Edge**



**Fig F6: Cavity Wall with Hob Detail - Flat Slab**



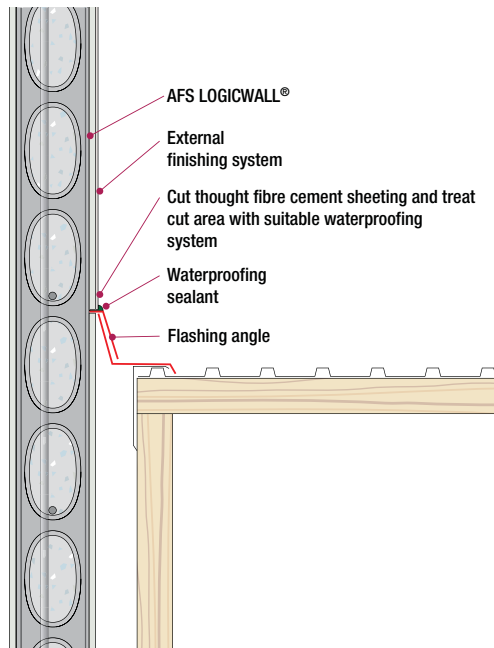


## Flashings

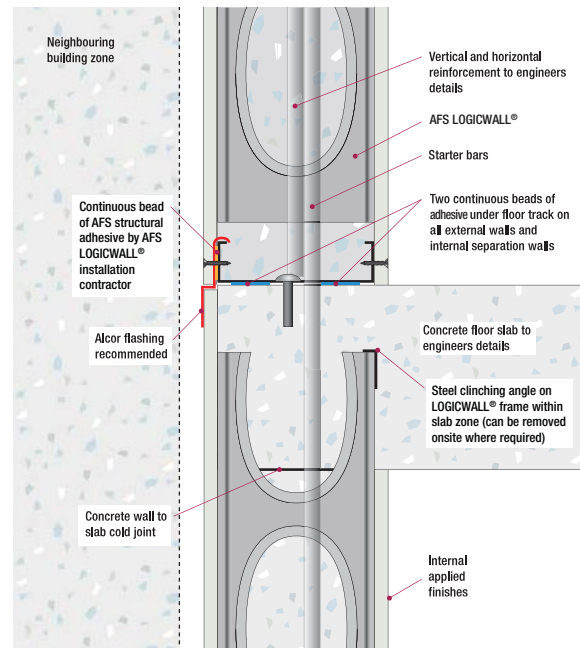
The use of flashings applies to the following areas of AFS Logicwall® construction:

1. **Boundary Walls** – the cavity between the external AFS Logicwall® and the neighbouring building must be fully flashed to prevent water ingress onto the often uncoated AFS Logicwall®.
2. **For Boundary Walls not able to be sealed or coated due to proximity of the neighbouring building** – an Alcor flexible flashing (or similar) is required to prevent water ingress through the horizontal joint.

**Fig F7: Boundary Wall Flashing**

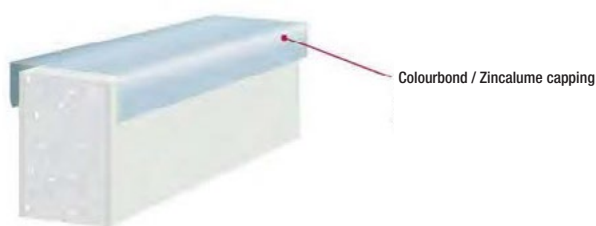


**Fig F8: Boundary Wall Flashing - No access**



3. **Top of Walls** – The exposed top of AFS Logicwall® is vulnerable to water ingress. It is mandatory that a flashing, Colourbond or Zincalume, is installed to cap the top of exposed AFS Logicwall® panels to prevent water ingress.

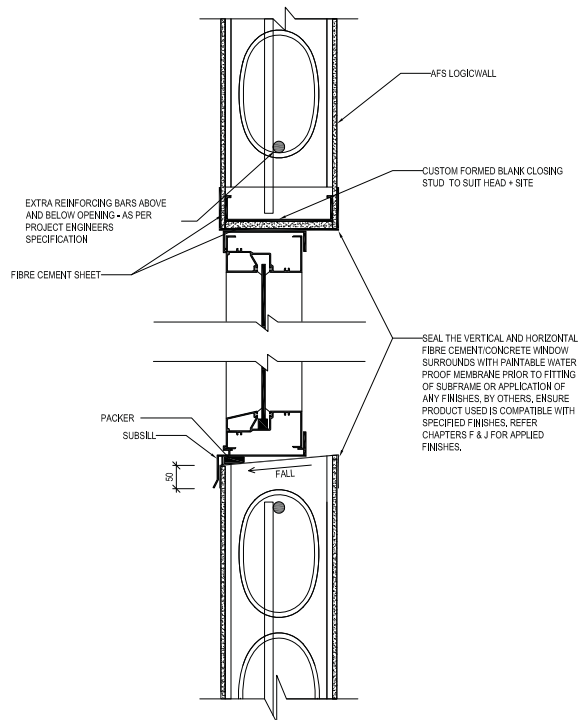
**Fig F9: Wall Capping**



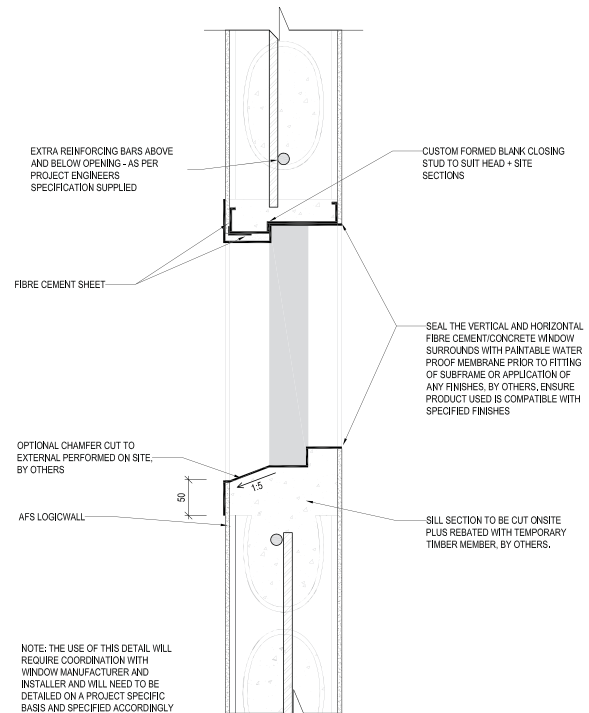
## Windows

AFS recommends the following two details for successful window installation in AFS Logicwall®, which both adopt a commercial or semi-commercial window section incorporating a sub-head and sub-sill.

**Fig F10: Commercial Window Section Detail – Flat Reveal**



**Fig F11: Commercial Window Section Detail – Rebated Head Reveal**



## Durability

### Introduction

The ultimate durability of any building system relies on appropriateness of design and accuracy of construction methodology together with the performance of individual components and compatibility of related components.

The durability and longevity of the exterior façade is heavily influenced by the compatibility of the finishing and weatherproofing systems with the structural dynamics of the AFS Logicwall® fibre cement faced, solid masonry core, panelised and flush jointed system.

The exterior façade of AFS Logicwall® comprises a fibre cement face incorporating a special water block technology which limits water penetrating into the sheet through the construction phase and provides a stable surface for the installation of the Weatherproofing Coatings system.

### Movement Control

Failure to accommodate for normal masonry expansion and contraction in accordance with design specification will induce excessive joint stress and potential joint cracking and breakdown on the weatherproofing barrier.

Best practice defines suitable expansion/contraction relief joints be installed at natural building weak points (eg in line with openings (window / doors), at all horizontal multi-levels, and at all interfaces of different building construction materials) as defined by the engineer.

Flush jointing of panels (other than at defined movement joints) is a critical aspect of the façade system and requires specific attention. Rigid, cementitious jointing or render systems are not recommended and will limit system performance.



## External Finishing

AFS Logicwall® external walls require the application of high quality external coating system to achieve:

- a) A water resistant building envelope, and
- b) an aesthetically pleasing building appearance.

### Responsibilities of Coating Manufacturer

To supply quality facade coating systems and specifications together with technical advice and representation to AFS projects. It is the responsibility of the coating manufacturer to show compliance to all relevant performance requirements as per the latest NCC.

### Materials & Application Warranty

The coatings system manufacturer shall warrant its products and systems in accordance with its documented warranty procedures and pursuant to Registered applicators providing co-workmanship warranties ensuring correct and proper installation in full accordance with coating systems manufacturer recommendations

### AFS Logicwall® Wall Substrate Installation Standards & Alignments

AFS Logicwall® panels shall be installed in strict accordance with the AFS Systems Pty Ltd recommendations. For optimum finishing system efficiencies, AFS Logicwall® panel section alignment shall be true an plumb alignment variation of  $\pm 4\text{mm}$ . Where tolerances alternate remedial high build coating system recommendations may apply and shall be considered variations for contacting purposes. Additionally, it is important to ensure minimum variation of floor to floor alignment together with correct installation of control joints over large area and at floor to floor sections, window or other openings of structure to allow adequate movement of the building envelope.

### Responsibilities of Applicator(s)

The nominated Applicator(s) shall deliver all materials and labour to complete the works to the agreed colour, time frame and standard in full accordance with the latest data provided by the coating manufacturer on the AFS Facade coating system.

### External Coating Systems

The coating systems shall conform to AS4548 Guide to long-life coatings for Concrete and Masonry.

Long term performance of the Weatherproofing Envelope requires :

- Low water transmission.
- Adequate crackbridging capability to maintain a continuous film under dynamic stress resulting from thermal expansion and contraction and normal joint movement.
- Adequate water vapour permeability to allow for normal moisture vapour movement preventing vapour pressure from under the film to cause blistering.
- Refer to the manufacturer's specifications for detailed instructions and advice.

Maintenance  
Durability and longevity of the façade system requires periodic inspection and maintenance to identify and correct deleterious conditions.

Inspections should include examination of any abnormal coating staining or water run off concentration, flashings and seals as well as attention to potential moisture issues such as ground water drainage or build up of soils or other wastes against the façade face.

Specific attention should be given to control jointing failure or signs of excess movement which should be repaired immediately to prevent water ingress and potential surrounding coating issues.

Early signs of moulds or mildew (i.e. organic growth) must be addressed to prevent spread of the spoilage. Organic growths occur typically due the presence of excess moisture and nutrient. (i.e. dirt or mould spores deposited on the surface). The applied coating cannot "grow" mould. Identification of organic growth requires correction of contributory issue and cleaning of the surface including a suitable mould-mildew agent.

For optimum aesthetics and to extend system lifecycle, it is recommended to annually wash down the exterior surface using a suitable mild detergent solution and medium pressure wash (i.e. <1000 psi).

## External Finishing (continued)

| Minimum Coating System Performance Specification for AFS Logicwall® |                     |                                       |
|---|---------------------|---------------------------------------|
| Water Transmission  | AS4548.5 Appendix B | Less than 10g/24h/m <sup>2</sup> /kPa |
| Crack Bridging  | AS4548.5 Appendix F | 1 mm (minimum)                        |
| Moisture Vapour Permeability  | AS4548.5 Appendix C | > 50 g /m <sup>2</sup> /24h           |

### Extending Lifestyle Performance

Ultimate lifecycle costs of the total façade system are optimised when coating systems (i.e. the specified final weatherproofing barrier coat) are reinstalled typically after 10-15 years.

Lifecycle analysis confirms a 10-15 year recoating window together with periodic maintenance of the façade system prior to deterioration to be the most effective cycle to deliver optimum performance, aesthetics and cost efficiency.

The "Lifetime Warranty Process" requires inspection, necessary maintenance & cleaning on routine intervals

– typically every few years (dependent on location and exposure) by a trained applicator and then subsequent re - top-coating prior to the Warranty Expiration.

At agreed intervals and/or as required relative to building or site issues, any touch ups (areas of stress/damage) may be addressed as Preventative Maintenance.

The "Lifetime Warranty Process" maximises the aesthetic and performance attributes of the facade system and minimises potential repair costs.