

MODULAR SYSTEM FOR FACADES

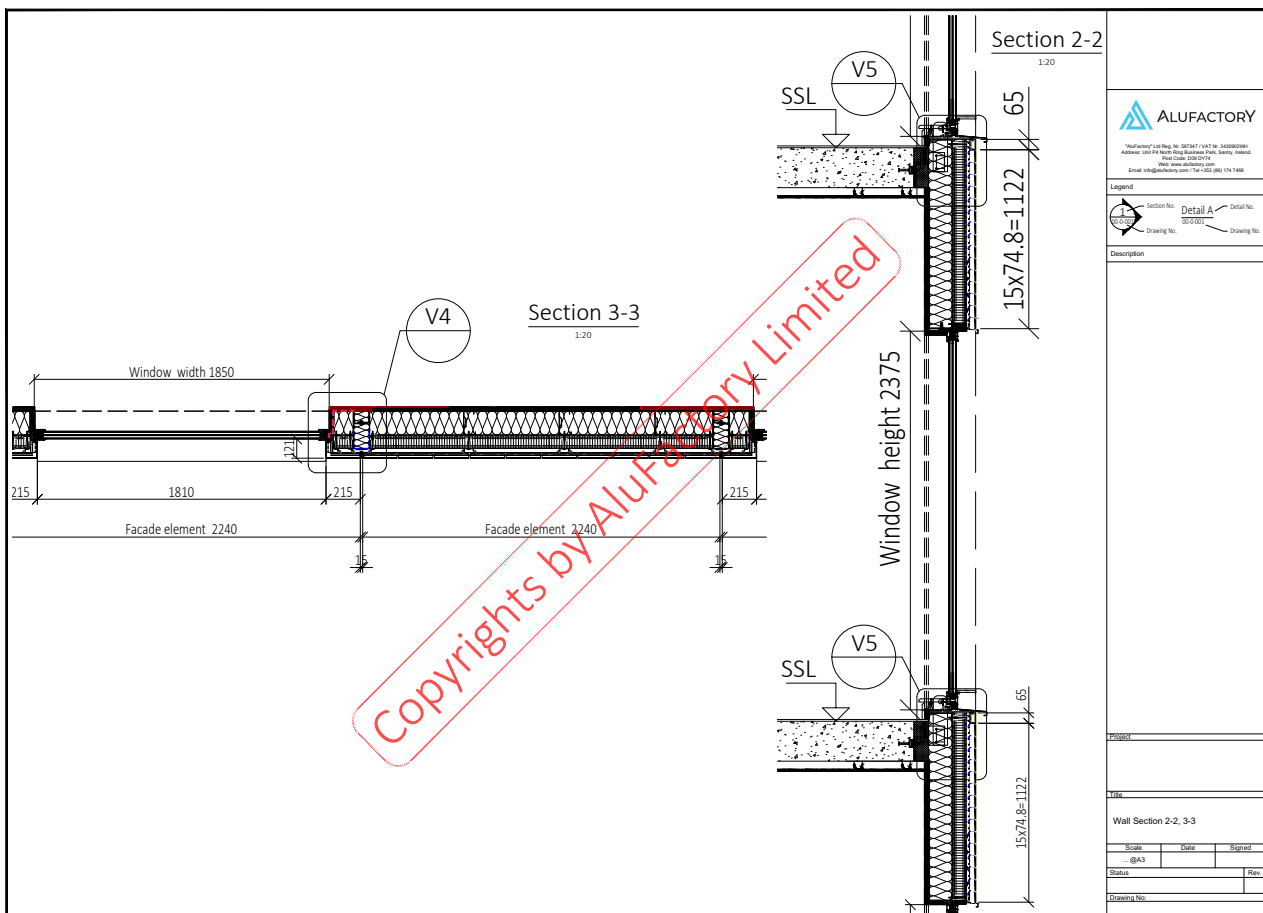


INTRODUCTION TO MODULAR SYSTEMS

Currently we are seeing that the **increase of offsite manufacturing** is revolutionising the way buildings are being built. Modular facades are designed to exploit the benefits of building off site and allow modern methods of construction to be applied to the external envelope.

More specifiers, developers and contractors than ever before are recognising the **benefits** of moving elements of the construction process into a controlled factory environment. The build process can be speeded up, quality is improved and work on site is significantly safer.

Our Modular system consists of **noncombustible materials** and is tested to fire classification according to EN 13501 and achieves class A2

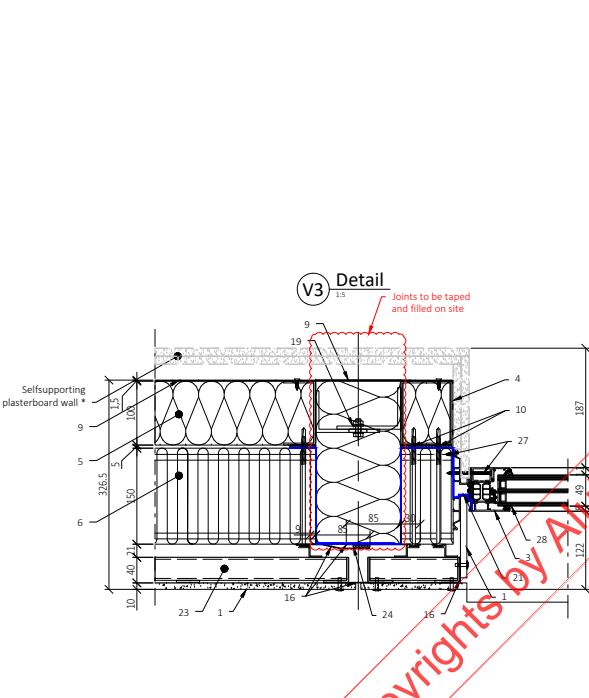


HOW THE APPROACH WORKS

Modular facades consist of **prefabricated and assembled units** which can be moved direct from the factory environment to site for **fast installation** onto pre-prepared fixings. The approach can be used for technically challenging projects, as well as fast track schemes, new build and refurbishment, and new designs can be developed for more complex and bespoke facades.

Modular facades do not dictate uniformity- in fact an infinite **range of design variations** is possible within the facade structure, with a mix of panel sizes, colours and materials.


Conventional cladding can also be eliminated because the Modular panels can hold stone, terracotta panels and ventilated rain screen cladding, for example, as well as glass and brick cladding developed by AluFactory Ltd - Alu-Brick Cladding. This gives a **single point of responsibility** for the building envelope, which is easier to manage, and there are no difficult interfaces between different cladding systems.



Detail V3
Joints to be taped and filled on site

| Label | Name | Supporting Doc. Nr. | Item description | Reaction to Fire class |
|---------------|--|---------------------|--|------------------------|
| 1 | Cementboard panel | | 10mm thick | |
| 2 | Artificial stone panel | | 33mm thick | |
| 3 | Reynaers aluminium construction | 10.1 | Reynaers' profile system CW 77-66 | |
| 4 | Metcac Steel Framing System | 14.1 | C-profile S15020, U-shape profile U10030&U10030 | A1 |
| 5 | Insulation | | Stone Wool 100mm - Paroc WAS 35 | A1 |
| 6 | Self-supporting insulated panel | | Paroc, width 150mm | A1 |
| 7 | Aluminium vertical support rails | | Aluminium Top Hat profile | A1 |
| 8 | Gasket | 6.1 | Silicone gasket or rubber gasket | A1 |
| 9 | Galvanized sheet | 7.1 | Steel sheet, 1.5mm | |
| 10 | Continuous sealant | | Butyl sealant or similar | |
| 11 | Expansion joint | 3.1 | Silrub EPDM | |
| 12 | Fixing bracket | 14.2 | Galvanized Steel L-shape angles 150x8x10 & Plate, 15 mm | A1 |
| 14 | Stone panel | 13.2 | Reynaers art.nr. 156.6361 | A1 |
| 15 | Finishing Angle | 14.2 | Aluminium L-shape angles | A1 |
| 16 | Profile Flashing | | Aluminium flashing < 3 mm | |
| 17 | External sill & bracket | 14.2 | Aluminium flashing > 3 mm | A1 |
| 18 | Stainless steel sheet | 6.1 | Stainless steel sheet 0.8 mm | A1 |
| 19 | Fixing bracket | 14.2 | U-shape profile or L-shape profile | A1 |
| 20 | Supporting bracket | 14.3 | Galvanized Steel L-shape angles 200x100x10 & Plate, 10 mm & 15mm | A1 |
| 21 | EPDM | | Water resistant membrane | A1 |
| 22 | Rigid insulation | 9.3 | Stone Wool 50mm - Paroc Lino 50 | |
| 23 | Subframe | | Aluminium angles 60x6x5 | |
| 24 | Self adhesive precompressed sealing tape | | Soudabond Aktiv Plus | |
| 25 | Drainage | | Weep holes c/c-450mm | |
| 26 | Fasteners | | Stainless steel A2 Rivet | |
| 27 | Fasteners | | Self-drilling element screw (every 300 mm) | |
| 28 | Glazing | | PG2 panel with window | |
| 29 | Vapor barrier membrane | | TRVEK Aiguard Reflective | |
| Total: | | | | |

Client:



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Legend:

1 Section No. A Detail No.
1 Drawing No. 001 Drawing No.

Project No. - Volume No. - Drawing type - Number
1705-00-1-001

Description:

* Not AF scope of works

Project:

File:

Cementboard wall detail V03

| | | |
|--------------|-------|----------|
| Scale: | Date: | Revised: |
| 1:5 (3/4) | | |
| Drawing No.: | Rev.: | |
| | 0 | |

THE ADVANTAGES - So what are the advantages of this alternative solution to facade design and construction?

Design:

Aesthetics – offer a wide variety of aesthetic variations allowing architects to use any combination of finishes, infills, external feature caps and glazing specification.

Versatile designs including brick cladding, stone cladding, terracotta, metal, composite or cement panels; windows, doors and fixed glazing; brise soleil and photovoltaic panels and many more design solutions can be incorporated with modular system and provides **single point of responsibility for the building envelope** which is easier to manage, and there are no difficult interfaces between different cladding systems.

Programme:

Shorter lead times – help contractors and the design team meet the increasing demand for shorter programme times, and can achieve impressive **reductions in time on site of up to 70%**.

Safety:

Increase safety on site – units can be installed without the need to work at a height on scaffolding. (As an advantage we would like to point that there is **no need for scaffolding** to complete facade installation of modular system)

Construction Efficiency:

Reduced storage and handling of materials on site – particular advantage in city centre sites where space and access is restricted. (Reduced number of deliveries and general truck movements) (The number of visits to site by delivery vehicles is reduced by up to 70%). (Noise and disruption are reduced on site, further diminished by the reduction in the construction period, which means that neighbouring buildings are not affected as much as they would be during a traditional building process)

Reduced on site labour:

Reduces the numbers of operatives that are required on site, for these element of work, **by up to 70%**.

Reduces welfare facilities that are required on site,

Reduces the requirement for transportation and parking around the site,

Quality:

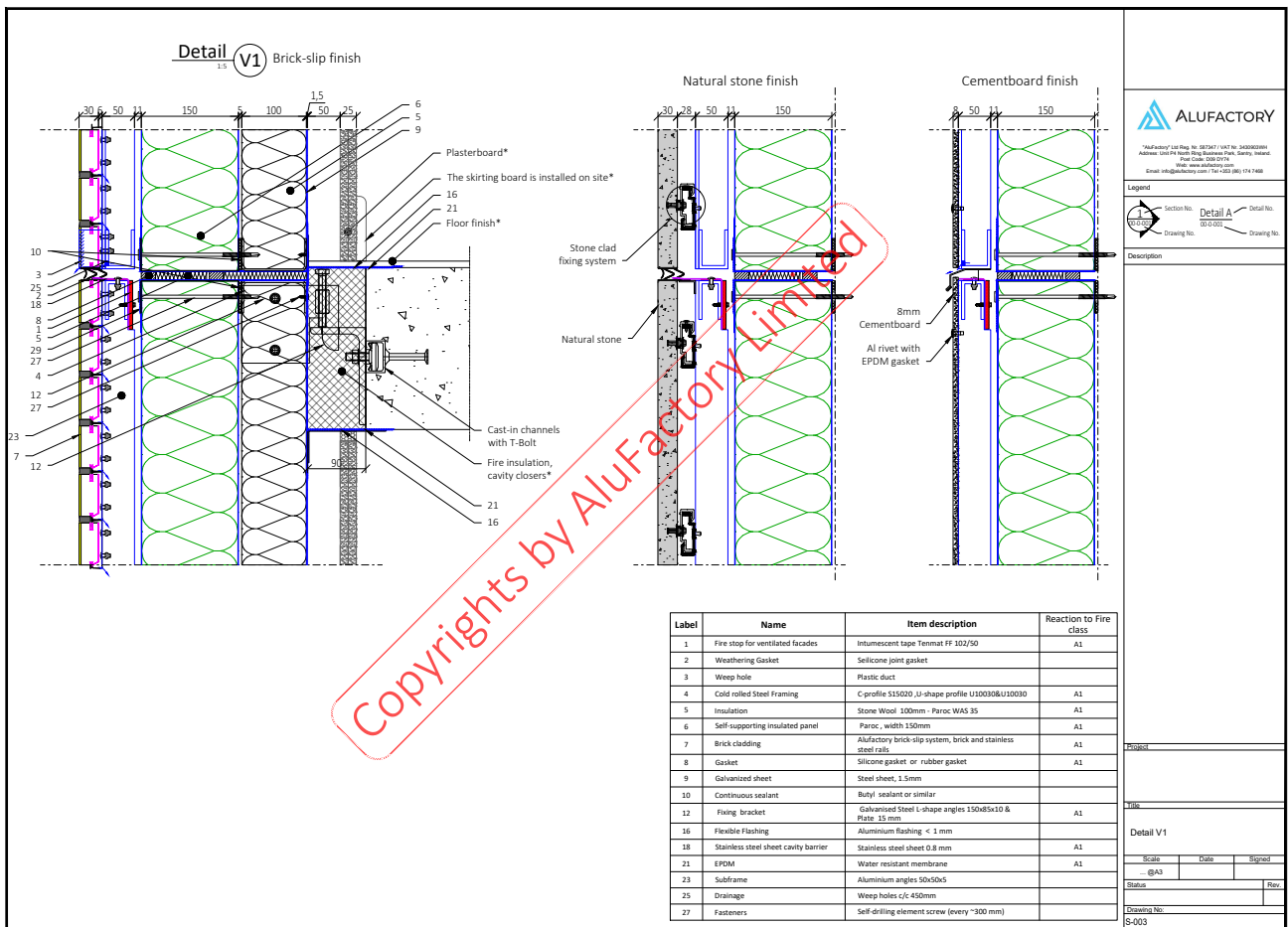
Precision engineered in a **controlled production environment** ensuring quality of facade systems are significantly improved

Less wastage – waste control measures are more stringent in a factory environment resulting in reduced costs from wastage, loss and damage.

The air-tightness and the thermal performance of the building fabric can be much higher than is usually achieved on site due to the tighter tolerances of joints that can be achieved in a factory environment which reduces the need for higher utility expenditure.

Environment:

Less wastage – **waste control measures** are more stringent in a factory environment resulting in reduced costs from wastage, loss and damage. (Construction waste is substantially reduced from 15% to 20% in a traditional building site to less than 1% in a factory environment) (The efficient use of lightweight materials and the reduced waste means that embodied energy of the construction materials is also reduced).



COMMERCIAL ADVANTAGES OF MODULAR SYSTEMS

- off site construction of modular facade takes most of the production away from the construction site, and essentially the slow unproductive site activities are replaced by **more efficient faster factory processes.**
- savings in site infrastructure and construction management, materials use and wastage are reduced and **productivity is increased,**
- **saving of scaffolding cost,** as all installations are completed from inside of the building,
- with a quicker delivery time the developer **reduces the risk of market change** and can more efficiently meet just in time market demand.
- sale or rental can be **achieved earlier,**
- **benefits in speed of installation** versus limited change order opportunities,
- inner city sites, and their associated **material storage costs,**
- **adding additional floors to existing buildings** the AluFactory lightweight system is ideally suited,

