



**briklok**  
by RJ Facades

System Handbook

# Brick facades reimaged

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# briklok™

The new **briklok™** system by RJ Facades, introduces a strength of backing support wall, new to ventilated facades.

A unique take on the brick slip system. A **full-enclosed** back aluminium support frame, for **natural brick slips**.

The new patent pending briklok™ system is a unique **interlocking design** that creates a solid aluminium inner cavity, providing **simple, tested** cavity barrier installation.

The briklok design creates the possibilities of the **off-site fabrication of columns**, and **corner returns** resulting in improved, reduced installation time for



The core values at RJ are **engineering, safety, & design**

Designed in partnership with **RJ Facades**, briklok provides architects, engineer practices, developers and contractors with a **tried, tested** and **accredited** system used on UK landmark projects over the past one and a half decades.

The complete facade system can be recognised by the component parts; a range of helping hand brackets, vertical profiles designed for briklok profiles, structural support profiles for SFS construction detailing, cavity barriers for fire stop and ETA approved fixings for masonry, concrete and steel.

With briklok, you get the **support and expertise** of the RJ Facades, with over a decade in facades, and a history rooted in technical fixings. We can work with you on the most complex of projects, supporting in services such as; structural façade calculations, wind load calculations, thermal calculations, CAD support and site training.

Contact us for more information on our CPD seminars.

# UK Certification & Accreditation

Briklok systems provide full UKAS accreditation certificate. To achieve accreditation the briklok system has been tested by UL to the new CWCT Sequence B, the first full through wall accreditation available in the UK.

UKAS accredited, NHBC accepted UL certification, formerly Winmark by Wintech. The approval covers all elements of the facade system, including elements such as; material specification, facade design to relevant Eurocode, and traceability through the RJ manufacturers and relevant supply chain.

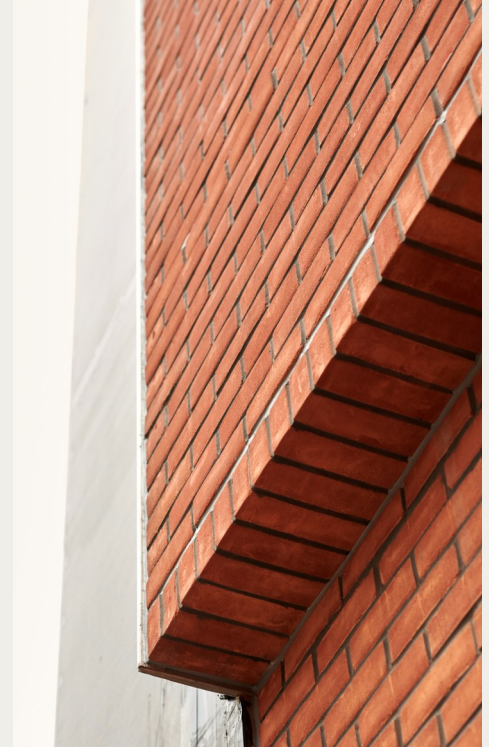
The certification evaluates the performance of the facade and cladding system using **CWCT sequence B** – Standard for systemised building envelopes 2005. The assessment includes the SFS support structure for through wall considerations of:

**Air leakage** (infiltration and exfiltration) – CWCT section 5

**Water Tightness** (static and dynamic) – CWCT section 6, 7 & 9

**Impact testing** (retention of performance & safety to persons) – CWCT TN76

**Wind resistance** (serviceability and safety) – CWCT section 11 & 12



The **RJ Facades** support sub structure also **has the UL Mark – Performance of Cladding and Cladding Support Systems**

RJ Facade Systems supply into the **UK market**, Facade Support Systems for all the facade materials used in ventilated facades. **Designed, extruded and manufactured in the UK.**

The UL certification covers the **range a brackets and components** . The EVT II brackets and components are manufactured and fabricated in the UK at **UL audited manufacturing** sites.

All products are dispatched/transported by RJ UK, for distribution to the client. The certificate incorporates the **UK distribution of RJ Facades** cladding support systems with their **UL approved supply chain**.

# CWCT Sequence B

The **Centre for Window and Cladding Technology (The CWCT)** is an independent provider of guidance and information for **building envelopes**. CWCT provide the technical guidance for what is required of a ventilated facade system, and how is to be tested.

Both the National Building Specification (NBS) and National House Building Council (NHBC) standards are based on the CWCT 'Standard for systemised building envelopes'.



CWCT is made up of a committee of people across several disciplines including engineers, architects, and consultants. The CWCT is now able to cover a broad range of specialisms in the industry. As a result, the CWCT provides industry leading knowledge which is put into standardised documents for the industry to use.



**Air Leakage** - The air-tightness test assesses the performance of windows, doors, cladding, and curtain walling in resisting air penetration despite the wind loads on the products. We tested to a 2.4kN/m<sup>2</sup> serviceability load, and a 3.6kN/m<sup>2</sup> ultimate load., and achieved passes.

**Water Tightness** - CWCT testing on water permeability seeks to identify leaks on the exterior cladding used on your building. The technicians set up a testing rig subjected to different water pressures for the assessment.

Hose testing and spray bar testing are used to identify resistance against water penetration by surface runoff. These resulted in passes.

**Impact Testing** - CWCT classifies impact testing into two: hard body- and soft body tests. final results point towards the maximum point load impact that the cladding can sustain. The impact test results in all areas were Class 1, negligible risk.

**Wind Resistance** - These modules focus on the serviceability and safety of the product. The test conductors set up a testing rig with a clad wall in an enclosed space. The technicians pump in air into the sealed chamber and then suck it out, creating dynamic pressure.

Positive pressure acts as a load on the cladding, while negative pressure tries to pull the cladding off the wall. Any gaps that develop from the previously airtight walls may point out the faults in the system. The test can also identify stress limits on the rainscreen cladding material. All o the wind resistance tests resulted in a pass.

# Off-site Construction



The **unique design** of briklok, coupled with the structural ridged nature of aluminium, enables the profiles to be fabricated into pre-made corners off site.

The ability to **pre-form corners** and returns **off-site**, can significantly **reduce site installation time**. The returns can be cut and assembled off-site, and arrive palletised and **ready to install**. Cutting and punching off-site produce **clean and accurate cuts** and holes, at a **precision** un-achievable on site. This can **reduce wastage**, and result in a **flawless final product**.

These parts will be **fabricated for the project**, taking into account the requirements for profile, and sizes of returns.

The profiles are secured using an **extruded aluminium angle**, and the holes punched on a production line. This gives an incredibly **minimal tolerance** on hole locations. They are then assembled by hand with A4 stainless steel rivets.

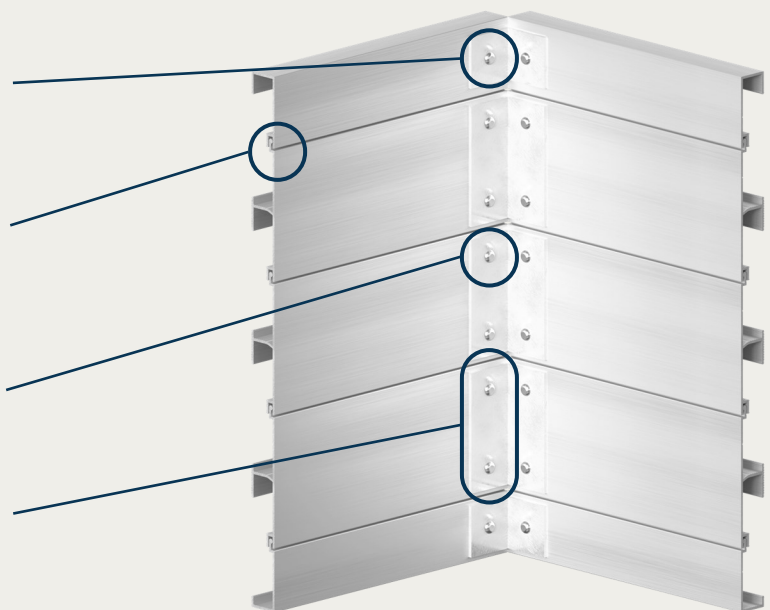
In some instances it can be more efficient to build the returns on-site. Both methods have been **CWCT, Sequence B Tested** and are **approved details**.

Extruded **6063-T6 aluminium** profiles are used to join the corner profiles

**briklok** interlocking design creates strength to the design, allowing simplification of the sub-frame design

**Fully Stainless Rivets** are used for a strong and **corrosion resistant** connection

Two rivets are used per side to **resist torsion**. This allows for **longer cantilevers**



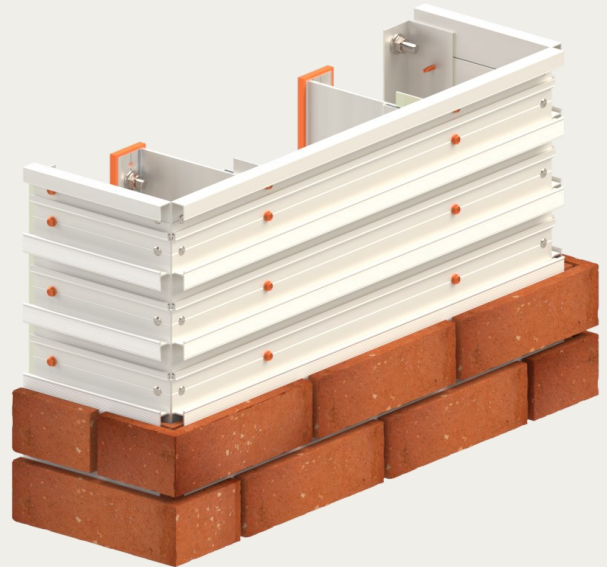


# Pre-fab Columns

As well as pre-fabricated corners, we can use the same processes and tools to create **column details**.

Specifically designed for buildings where the brick column detail between windows is **repeated on all floor levels**. The profiles simply clip together, constructing the column in a fraction of the time, while **removing substructure and site cutting**.

The design in some cases enables standard sub structure detailing to be **simplified**, creating a reduction in cost, and providing space for **cavity barrier details**.



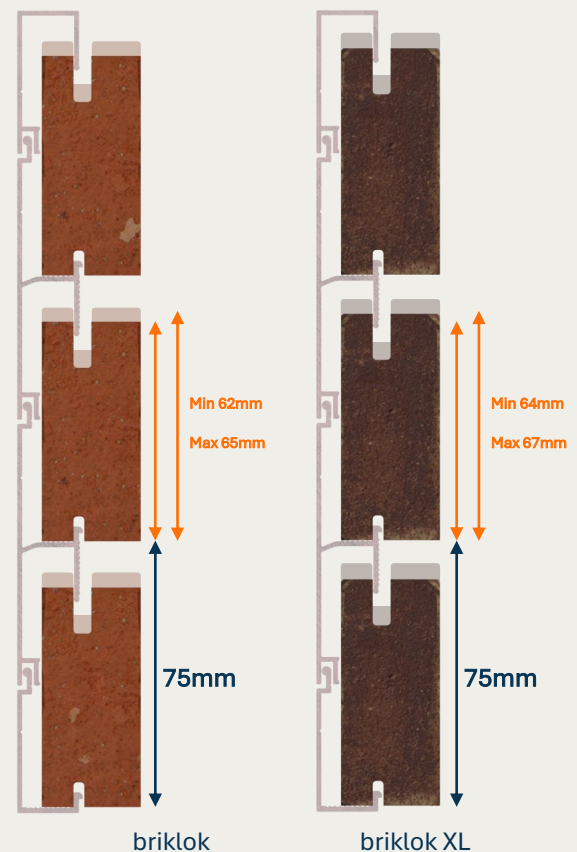
## briklok Standard & XL

The system works with most types of **T2 natural bricks**.

**briklok 'standard'** is designed for a brick with dimensions from 62mm to 65mm which covered most UK manufactured bricks, similar to the lb-stock FC range.

**briklok 'XL'** is designed for a brick with dimensions from 64mm to 67mm to suit engineering bricks, and natural clay bricks where less shrinkage occurs during manufacture

There are two sizes of mid and upper profiles. There is briklok, and briklok XL. These were created because of the variance that occurs in **real bricks**. The size of profile required will be **determined pre-project**, based on a sample of bricks. Both briklok and briklok XL use the same lower profile. This is not effected by the height of the brick.



# Natural Bricks

The **briklok system** uses natural clay bricks to create the look and feel of a timeless brick building, while enabling a **modern installation approach**.

With the increase in the re-clad market over the last decade, brick slips have become a **desirable, sustainable, and cost-effective solution**.

Briklok works with either an Ibstock brick, or another brick selected by the **client or architect**, that complies to the specification of the system. The brick slips are made from a **real clay brick**, radiating traditional aesthetic appeal. Enabling architects to create building facelifts, which combine style with improved energy efficiency.

In the UK, recladding can save around 200,000 tonnes of waste. Targets set by the Climate Change Act of 2008 are driving the reclad market forward.

The Ibstock brick design have been tested with the briklok system in **CWCT sequence B**, with **UKAS accreditation by UL**, **NHBC approved** method certification of certification.



A1 Fire Rated



F2 Frost Rated



UK Manufactured



CWCT Sequence B Tested



Local Materials



Bespoke options available



Express Delivery



Vast Range



Made for briklok





# Brick slip design

briklok system **partners with market leading companies** operating in the manufacture of brick slips.

Accessing the UK's **first fully automated** brick slip manufacturing centre at Ibstock, once fully operational, will be producing **around 50 million brick slips per year** to meet the growing demand in mid-to-high rise new build and other key markets such as retrofit and the low rise



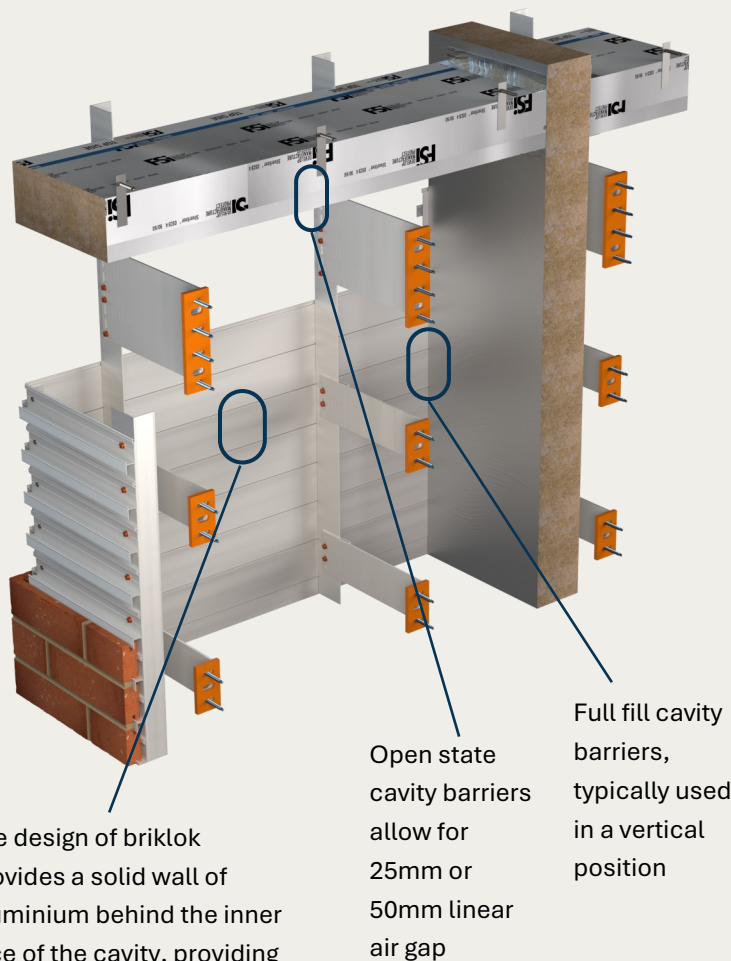
Combined with briklok system, brick slips enable **light weight construction**, with the **timeless aesthetic** appeal of brick even in **high-rise applications** and offer architects and developers almost **limitless options** when it comes to design and finish. The brick slips used in the Briklok system enable light weight construction are well suited for applications, such as high-rise buildings. Manufactured to UK tolerances the brick offers A1 fire rated, F2 Frost rated, CWCT system compatibility tested, manufacturer declaration of performance to BS EN 771-1:2011+A12015. The range has a large range of colours and textures, with standard sizes, with bespoke sizes and bespoke profiles available.



# Cavity Barrier Integration

The **briklok interlocking** rail system provides a **continuous aluminium** backing surface facing into the rainscreen cavity. This gives a solid and continuous **surface to compress vertical** cavity barrier against.

Briklok system has been tested to **TGD-019** in conjunction with cavity barrier system FSi Silverliner OSCB1 Horizontal Ventilated Cavity Barriers rated E90 I30, achieved a combined rating of E90 I30, **unaffected the performance of the barrier.**



The design of briklok provides a solid wall of aluminium behind the inner face of the cavity, providing simple, positive compression fit for the vertical cavity barriers.

Open state cavity barriers allow for 25mm or 50mm linear air gap

Full fill cavity barriers, typically used in a vertical position

The **open state cavity barriers** allow for 25mm or **50mm** linear air gap to ensure movement of air and drain any moisture within the facade. In the event of a fire the intumescent outer edge of the product will **expand** and close the ventilation gap between the product and the facade, preventing the passage of fire and smoke from one compartment to another. Open State Cavity Barriers are developed to protect the voids between the outer facade and the inner construction element of the building. It can easily be compression fit using the briklok interlocking aluminium profiles.

Full fill cavity barriers, typically used in a vertical position at corner junctions, wall partitions and around window openings, it is installed as a full fill barrier using compression.

It is designed to reinstate the fire resistance of a compartment, as well as offering good thermal and acoustic performance

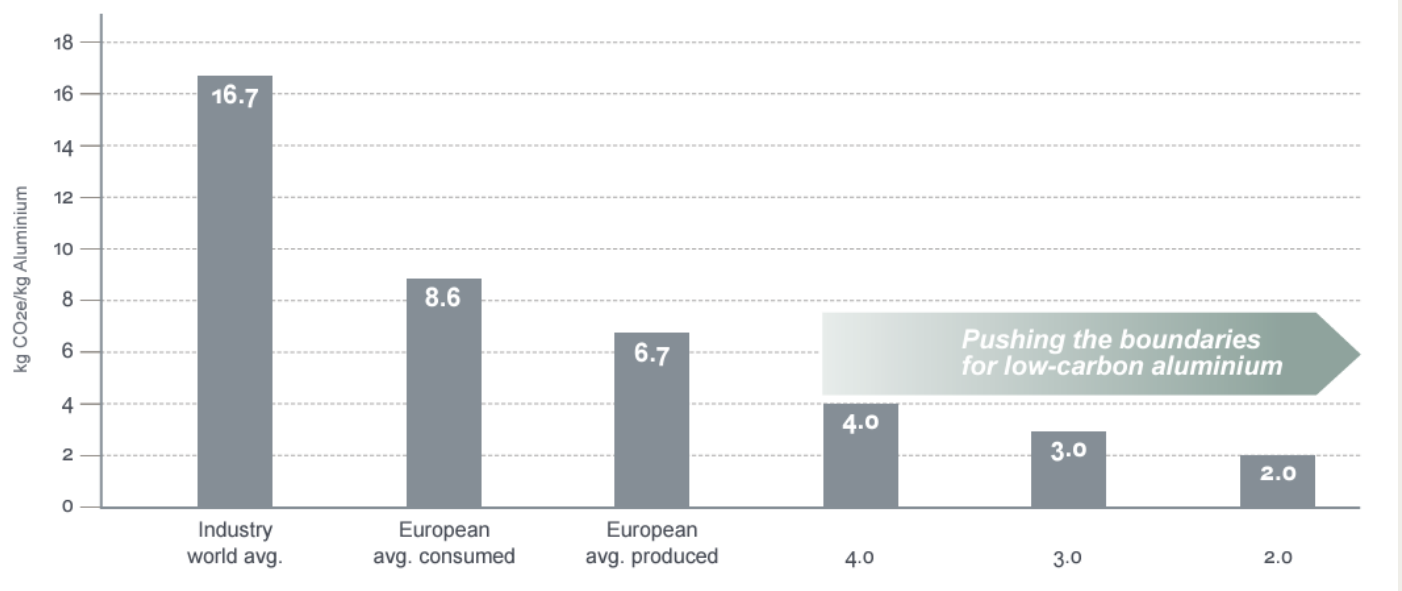
# Low Carbon Aluminium

Pushing the boundaries for high-quality recycled; *Hydro Recycled Low-Carbon Aluminium 4.0* program is Hydro's brand of recycled aluminium made with 44%\* recycled post-consumer aluminium.

Using recycled aluminium in the production process means that only 5% of the normal amount of energy is used, when comparing to primary aluminium. This energy usually contributes to CO<sub>2</sub> levels in the atmosphere. By reducing the amount of energy required to create the material, we're proactively reducing our affect on climate change.

RJ Facades' products, using Hydro's low-carbon recycled aluminium, are designed to help you reach your sustainability goals, and meet the demands of an ever more so climate-conscious industry.

- Maximum or below 4.0 kg CO<sub>2</sub>e/kg aluminium, including all process steps
- TRACEABLE down to each individual batch
- VERIFIED by DNV-GL according to ISO 14064
- CONFIRMED by Environment Product Declarations
- Available as Aluminium Stewardship Initiative-certified aluminium



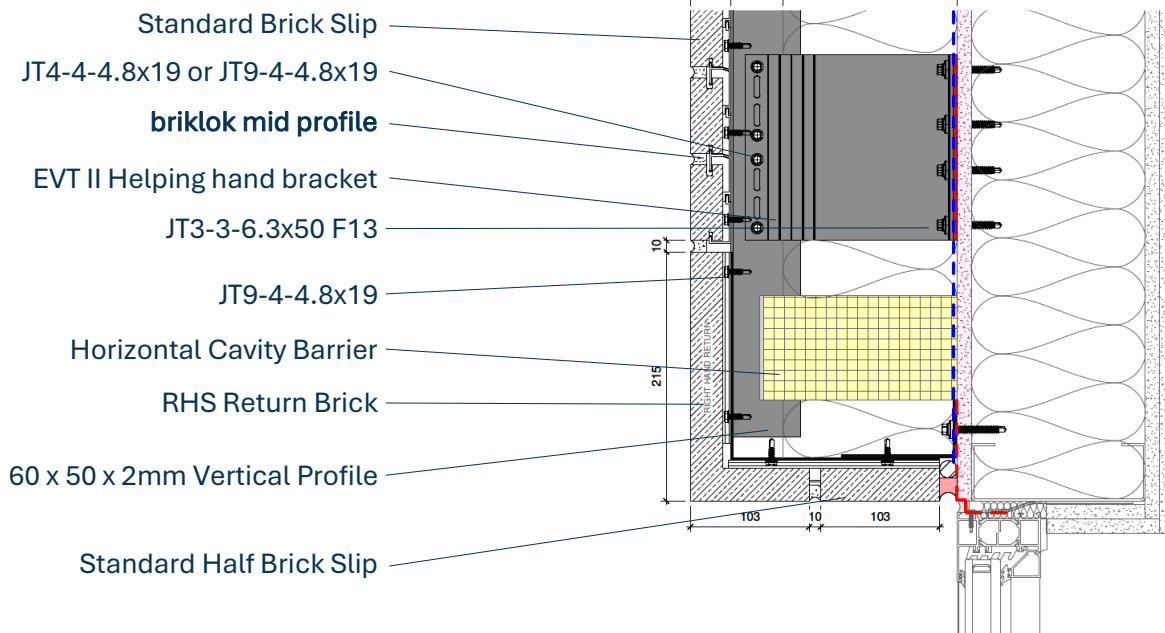
3.0 and 2.0 are currently not available in 6063 T6 aluminium required for façade systems.

\*Post-consumer scrap percentage based on latest Hydro Recycled Low-Carbon Aluminium 4.0 EPD

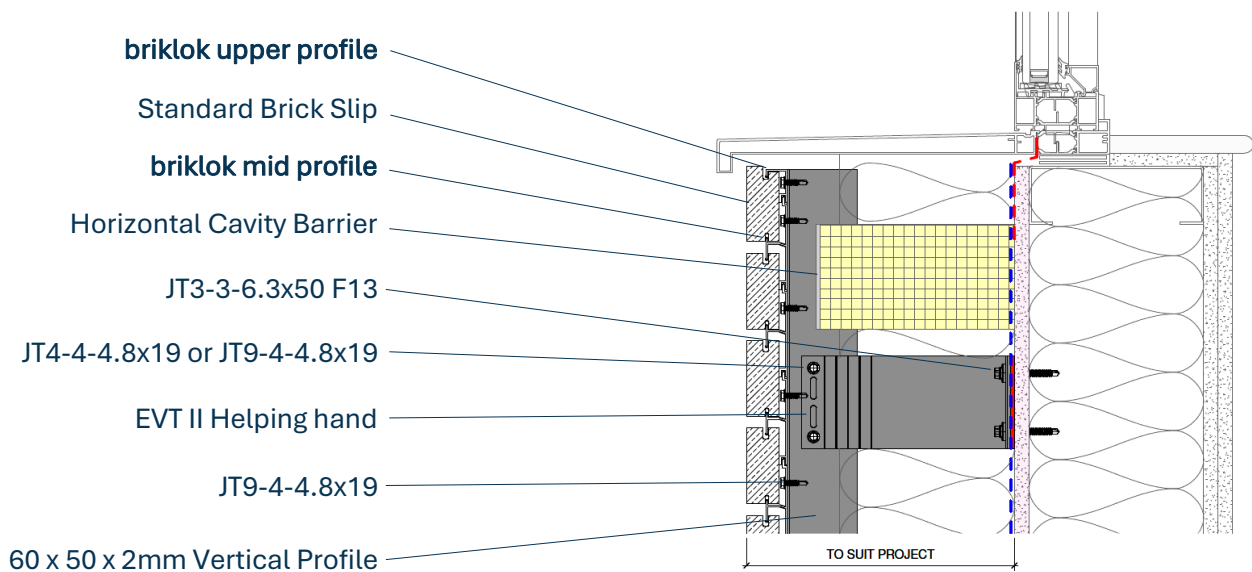


# Design Details

## Window Head

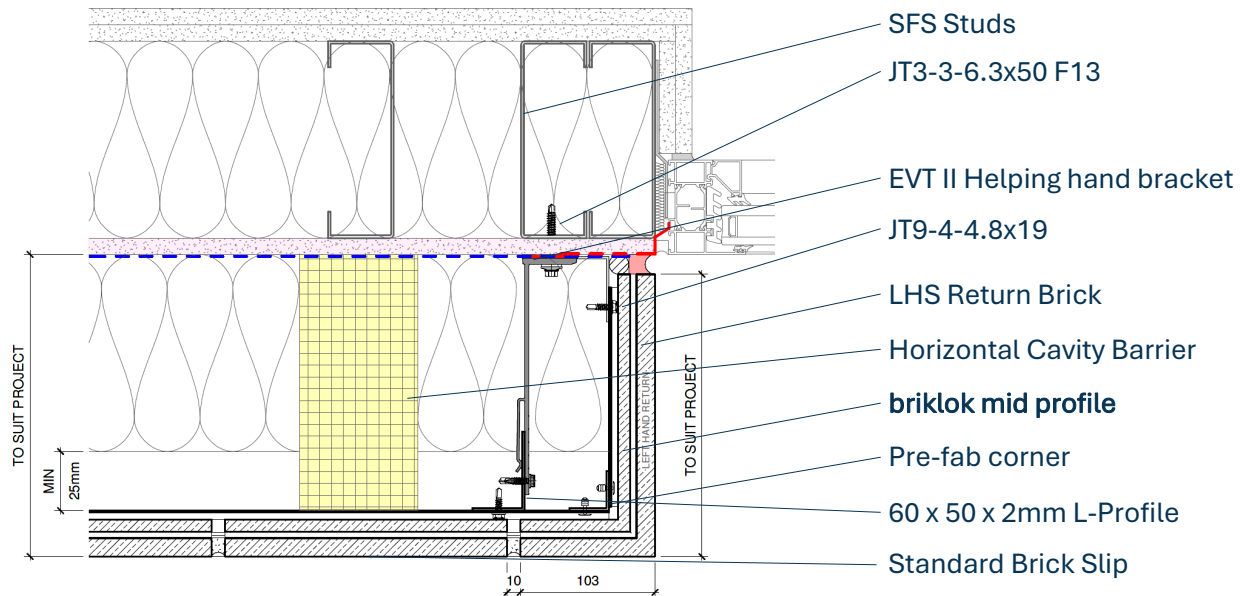


## Window Sill

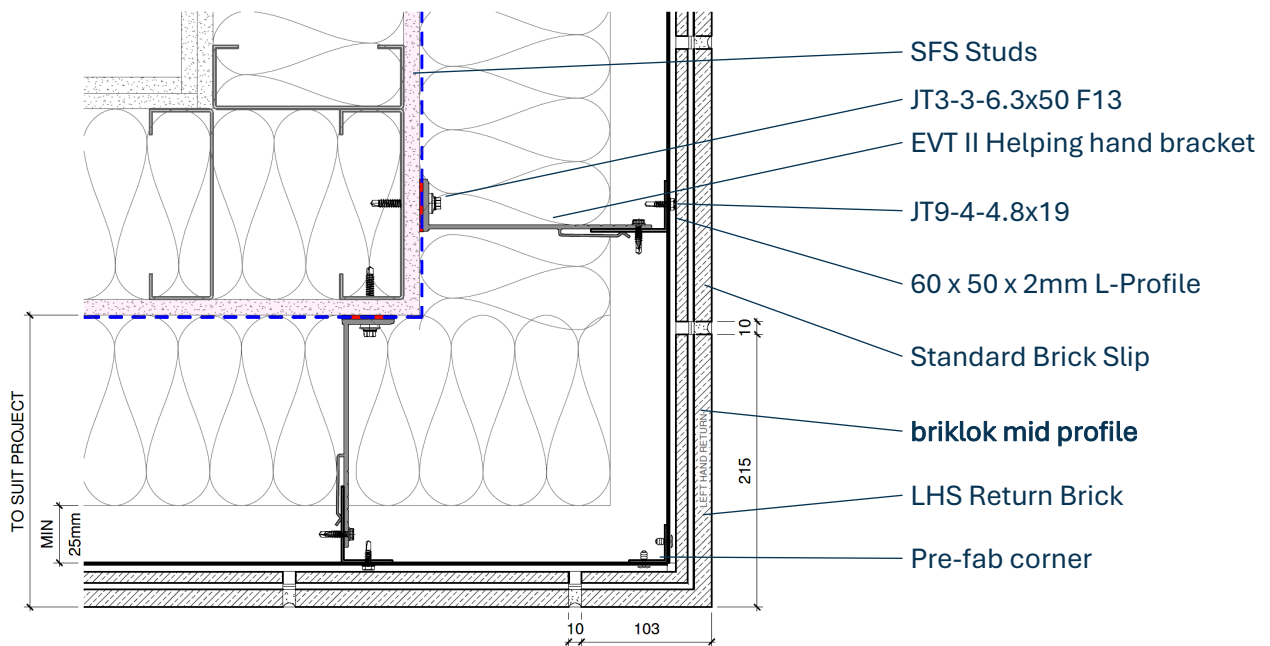


# Design Details

## Window Jamb

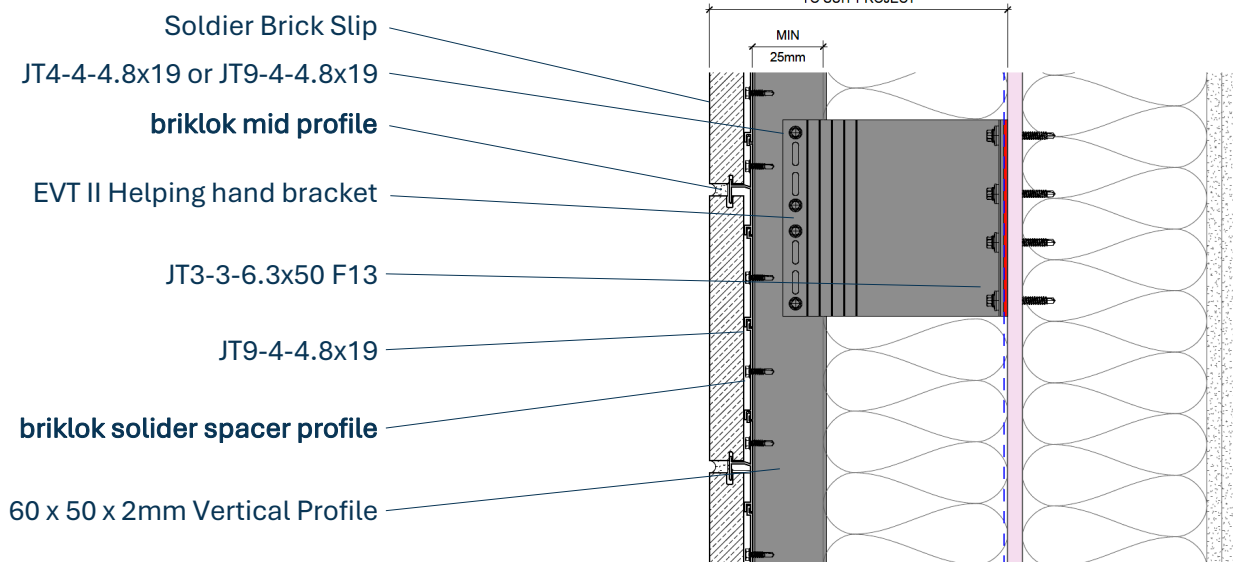


## Corner

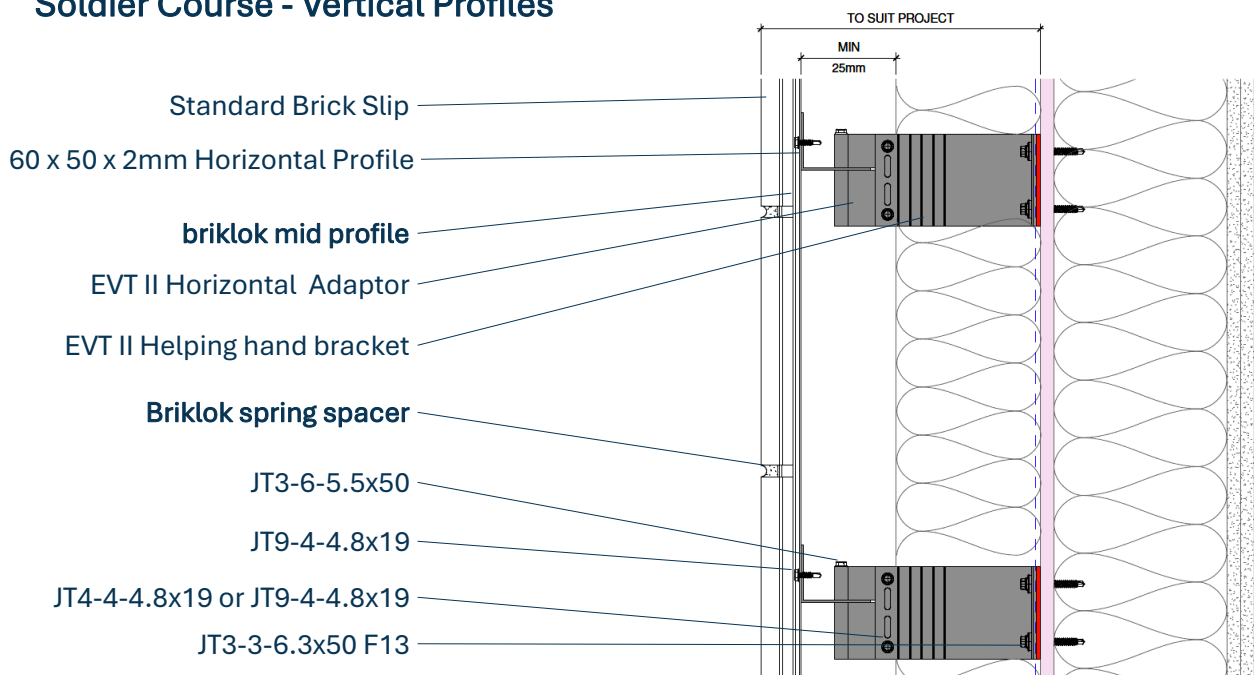


# Design Details

## Soldier Course - Solider Spacer



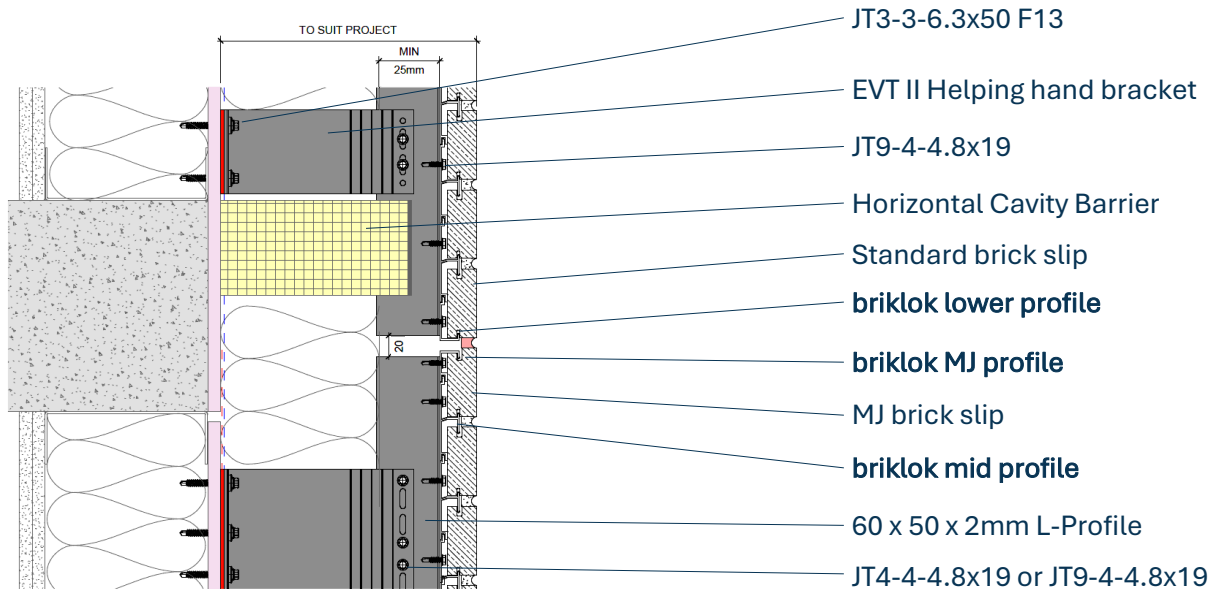
## Soldier Course - Vertical Profiles



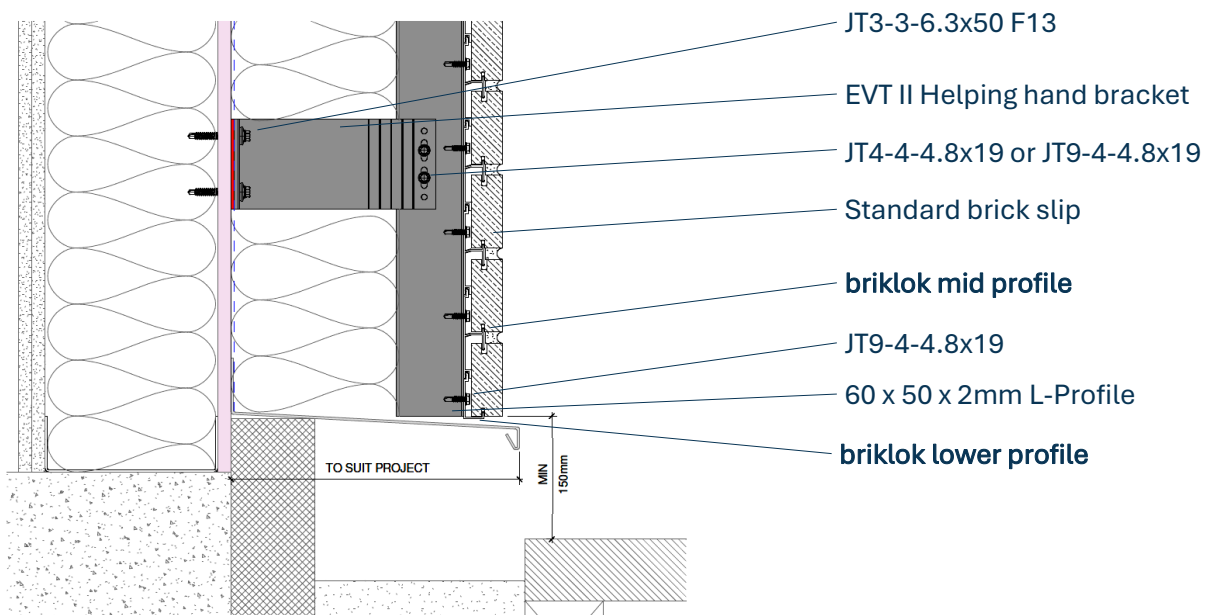


# Design Details

## Movement Joint (10mm)



## Base detail



**briklok**

brick facades reimagined