



CS1 External Wall Insulation Systems

Introduction

CS1 External wall insulation cavity systems are extensively used on lightweight steel framed structures to satisfy the requirement for a drained cavity void behind the cladding system. The systems have multiple finishes available to create a high quality finish to meet the specifier and clients demand for an attractive building façade design. Its versatility as a cladding system really lends itself to accommodate façade designing to create a modern striking building.

The **CS1** systems all hold recognised third party tested certification from KIWA BDA. This confirms that the systems have undergone scrutiny in testing and have met all the requirements as fit for purpose when installed. The systems have been successfully installed onto new build high rise domestic apartment dwellings and also played a part in replacement cladding schemes to re-establish an existing high rise to conform to the latest changes in cladding above 11m in height.

The differences in the **CS1** System and the **CS2** system is defined by higher exposure zones where the **CS2** would be selected over the **CS1** system, as it has a second CS sheathing board fully supporting the insulation

boards. Also **CS1** insulation boards are only high density mineral wool, as they have to span the fillet centres. The **CS2** system is not affected by the main LGSF sheathing board type selection, as the **CS1** system is directly fixed into the main LGSF sheathing board and as such requires pull out fixing performances that gypsum based sheathing boards are not able to provide. With these differences it offers a choice of system design that can be specified to suit the projects requirements.

When installed and maintained in accordance with **SPS Envirowall's** recommendations and the KIWA BDA Agreement certificate, the system will have a service life durability of at least 30 years. This service life durability can be extended to 60 years, if all fixings and fully exposed beads, trims and profiles are specified as austenitic stainless steel and the system is subject to a suitable inspection regime and is maintained accordingly.

Key Product Features

- ✓ Fully tested KIWA BDA Certified systems
- ✓ Totally Mineral wool insulation A1 board
- ✓ A1 or A2 Euro classification fire rated system solutions
- ✓ Suitable for High Rise use above 11m
- ✓ Re-clad solution
- ✓ High thermal performance
- ✓ Fully drained cavity
- ✓ Low cost cladding solution
- ✓ Fast application
- ✓ Takes cladding out of the critical path by quickly weatherproofing the building
- ✓ Service life durability of at least 30 to 60 years
- ✓ Extensive colour ranges
- ✓ High rise Brick slip finishes

Colours and Finishes

The **CS1** system has textured render finishes that are available in a wide range of colours to suit the look and use of the building to meet the clients criteria for a modern façade exterior.

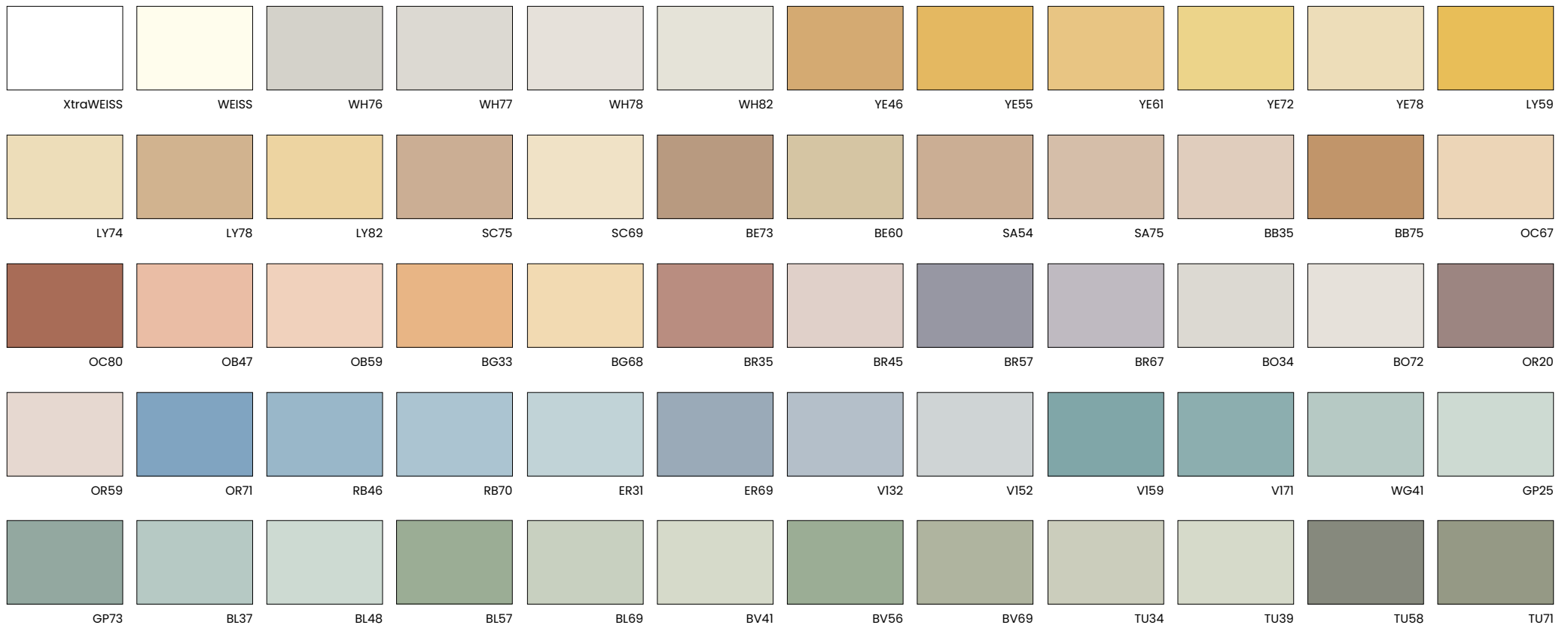
With modern technology we are able to bring brick slips in a lightweight mineral material up to 5mm thickness, making them ideal for higher rise applications. The manufacturing process affords a "real brick effect appearance" and excellent matching qualities to existing or new brick textures, spotting and shading which gives the finish the look of real brickwork from the past to the present.

Acrylic Brick Slips



Colours and Finishes

Top Coat Colours



Colour swatches have been reproduced as accurately as possible, however there may be some variations due to technical, colour reproduction and render manufacture reasons. If you require an accurate swatch, please ensure you ask us for a sample of the product and colour chosen prior to commencing any works.

Design

System principle: External Wall Insulated Cavity System

CS1 systems are in principle, render cladding systems, which have a drained cavity separating the insulation boards from the sheathing board substrate. This feature meets the requirements of building insurers such as the NHBC, enabling its use extensively across high rise dwelling projects. The minimum 15mm cavity width allows the system to drain effectively through to the base of the system removing the risk of water ingress passing into the main structure.

The systems primary role is to wrap the building thermally to the latest building regulation U value targets, which it easily achieves.

The systems are much faster to install than traditional brick and block construction, which allows the client a quicker construction path to building handover to potential residents.

Fire performance: European fire classification

CS1 external wall systems use A1 fire rated Mineral Wool (Rock fibre type) only, as the insulation boarding within the system. This offers a safe and secure basis to these systems following the changes to Approved Document B (fire safety) Volume 1 Dwellings 2019 edition incorporating 2020 and 2022 amendments – for use in England and Scotland's Technical handbooks.

Behaviour in relation to fire means that CS1 systems hold KIWA BDA third party certifications clarifying they are European classification A2-s1, d0 in accordance with BS EN 13501-1. They can also be elevated to an A1 fire rated system by simply using our Enviromin mineral type render texture finish. Both classifications mean that CS1 systems can be installed above 11m in height and so makes them ideal for high rise apartments and re-clad projects that require a new minimum A2 fire rated cladding system to be installed as a replacement for a none conforming existing cladding façade.

The cavity includes fire barriers as a part of its design, where at strategic locations, such as the floor levels, and perimeters of the system it has horizontal open state intumescent fire cavity barriers and around openings the Calcium silicate fillets or mineral wool (rock fibre) fire barriers.

Wind Loading & fixing patterns

CS1 systems carry a robust fixing procedure to suit the buildings location and height. SPS Envirowall can conduct a Wind load calculation to establish the required fixing pattern to suit its location and height that will establish its secure fixing application. This will give clear instruction on a grid fixing pattern to follow on site to meet the wind load calculation. We will also issue a fixing pattern drawing suite that includes the sacrificial fixing pattern, main grid through the mesh fixing pattern, BR 135 fire pin

It is important to reiterate that the **CS1** system cannot be installed where a Gypsum based sheathing board has been specified or applied to the SFS framing. In these circumstances a **CS2** system can be specified.

The High Density (HD) Mineral wool insulation boards in the **CS1** system are mechanically fixed back to the façade with 3 sacrificial fixings with 90mm oversized washers, this securely holds the boards in place prior to the main fixing grid being applied. Once the boarding is ready to receive the basecoating the main fixing pattern can be installed.

The reinforcement mesh plays a major role in this process, as the mesh is applied into the wet basecoat the fixings are then fitted through the mesh with a 60mm washer head, fixing into the main SFS sheathing board. The fixing pattern is an easy to follow grid formation with 100x100mm mesh patches applied over the washer heads to prevent cracking around the washers, it is important to still apply the additional fixings required around window and down the corners of the system where wind pressure will increase.

As required to satisfy BR 135 fire fixings a stainless-steel fixing along with a stainless-steel washer is also fixed through the wet basecoated mesh at a grid pattern of 1 per m2.

Thermal performance

The mineral wool insulation element of the system allows the **CS1** systems to perform thermally to meet the high standards now required in the building regulation standards, both for new build and any upgrade required in the re-clad market.

SPS Envirowall can create in-house U value calculations using specialist software that can also include a condensation risk analysis of the structure inside to out. The facility of creating a U value offers our specifiers the

opportunity to establish the project thermal target requirements early in the design stages.

Drained Cavity Facade

As a technical requirement of major building insurers, the **CS1** cavity based systems offer the solution for the specifiers, all inclusive of an A2 fire rated system. The 15mm A1 rated vertically orientated CS fillets form the spacers to create the drained cavity to meet this requirement. To ensure water draining down and out of the systems does not get trapped at window/door heads the system has drainage channels positioned in the cavity diagonally, spanning past the openings 150mm to allow the water to continue its journey out and away from the inner leaf of the LGSF construction.

CS A1 Fillets: Suitable sheathing boards

It is important to note that the **CS1** system cannot be installed where a Gypsum based sheathing board has been installed onto the LGSF framing.

The **CS1** fillets are positioned vertically along the façade to space the rest of the system away from the façade in order to create the minimum 15mm cavity. The fillets are set at 600mm centres and are always fixed through the main sheathing board into the steel framing behind and never just into the sheathing board alone.

Design

Sheathing board and system Application

SPS Envirowall EWI system accreditation does not state a specific sheathing board to avoid restrictions of use in application. In many applications SPS Envirowall technical services do not have control or influence over the specification of the sheathing board and subsequently can only set minimum stipulations of the sheathing board to achieve the required performance values for the system.

In the instances of a sheathing board already being specified or already installed, as with a reclad project, it is a requirement that the specification complies with to the below specification extract taken from relevant accreditation section to ensure appropriate minimum design guidance and application of use.

Performance and structural integrity

KIWA BDA Certificate BAW-18-050-S-A-UK Render – KIWA BDA Certificate BAW-18-078-S-A-UK Flexible Brick Slip

Weather Resistant to Category A or B in accordance with BS EN 12467

Have a bending strength of Class 2 or 3 in accordance with BS EN 12467

Achieves class A1 or not less than A2-s1-d0 in accordance with BS EN 13501-1

Minimum pullout resistance of no less than 0.7KN per mechanical fixing, excluding the subframe, in line with EOTA TR 051 and EAD 330196-01-0604.

As well as this the boards are required to be structurally sound and in suitably good condition to receive the EWI system proposed and associated fixings, in line with the agreed fixing pattern.

Confirmation from the manufacturer should be sought to ensure the correct fixing pattern has been used and a structural engineer consulted if there is any doubt about the boards' integrity.

Confirmation should also be from the manufacture of the sheathing boards in relation to the jointing application (weatherization and air-permeability) and any anticipated movement allowances and board edges for the board itself.

Fire performance

It is also a point of note that the fire performance of the system will only be valid over a substrate when the system is installed, bonded, and mechanically fixed or only mechanically fixed, to any end use substrates with a density at least 450 kg/m³ and any end use substrate of classes A1 and A2-s1,d0.

The preferred sheathing boards for use with the SPS Envirowall systems would be RCM Y-Wall or RCM Multipurpose as both satisfy the above criteria and have been heavily tested both with and without the system in question.

The sheathing board is not warrantied in our EWI systems as they do not form part of the system components yet will need to be deemed acceptable prior to the installation of the SPS Envirowall system.

Movement Joints

With regards to movement joints in an insulated render system – these are required where there is a change in the substrate types that leads to shear movement such as masonry to timber or concrete to SFS or where on a structure the deflection exceeds $L/360$ or 15mm (whichever is greater). Otherwise, the insulated render system itself does not require movement joints unless the substrate requires one to be present through the whole wall section to the outside face, determined by the project structural engineer or unless it is a brick slip finish being applied to the EWI system.

Breather Membrane

There is no requirement within our CS1 systems for the use of a breather membrane as long as the sheathing boards are appropriately sealed to allow for continual flow of water drainage. There may be a requirement from the sheathing board manufacturers or the project specifiers to install a breather membrane as good practice.

Installation

CS1 systems are principally installed in a similar way, the difference being the **CS2** system has a secondary supporting sheathing board and as such the fillets are 75mm wide, whereas the **CS1** requires a wider supporting fillet of 100mm having no secondary supporting sheathing board, hence only High Density mineral wool insulation is allowed to be used in the **CS1** system.

The fillets are installed vertically at 600mm centres to mirror the SFS framing which they are fixed into using wing tip self-drilling self-tapping countersunk head screws.

The aluminium basebead with a drained vent strip behind is fixed along the damp proof course at 300mm centres.

The drainage channels are fitted diagonally across the openings passing over the sides by 150mm.

Fire barriers are fitted at floor levels and base level using horizontal intumescent strip open state cavity barriers fixed at 250mm centres with stainless-steel fixings. Full depth mineral wool fire barriers are fitted around windows or used vertically at compartment zones. The edges of the system are fitted with a mineral wool cavity fire barrier at these locations. The use of CS calcium silicate fillets is also available as a cavity fire barrier

CS1 High density mineral wool insulation boards are fixed in a stagger bond pattern with the board edges sat centrally onto the 100mm fillets with 3 sacrificial fixings across the centre of the boards with an additional 90mm oversized washer to prevent pull over of the insulation boards prior to the main fixing grid being installed.

CS1 systems follows the fixing process of basecoating then applying the reinforcement mesh into the upper third of the basecoat layer and whilst still wet the main fixing grid pattern is applied through the mesh into the sheathing board behind. At this point as required to satisfy BR 135 fire fixings a stainless-steel fixing along with a stainless-steel washer is also fixed through the wet basecoated mesh at a grid pattern of 1 per m². These washer heads are covered over with 100mm x 100mm mesh patches bedded in with basecoat. A slurry layer of basecoat is applied over the fixings to a smooth or textured finish depending on the outer finish specified.

Handling & Storage

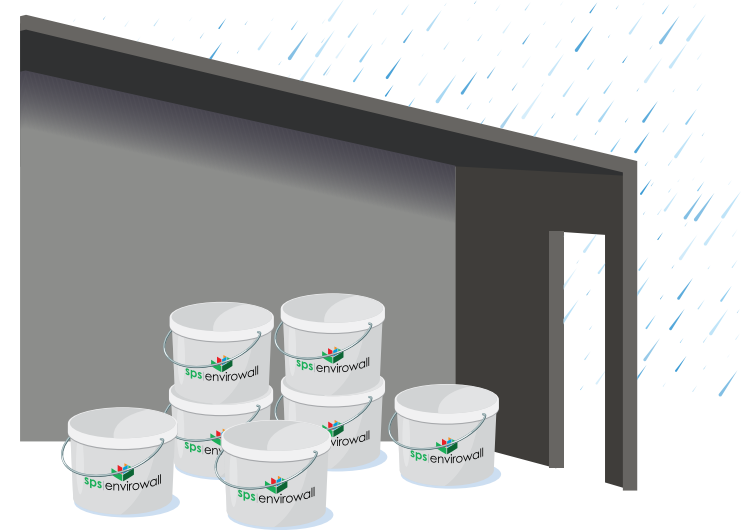
CS1 mineral wool insulation boards should be stored undercover and off the ground to prevent water ingress into the boards.

Site storage of SPS Envirowall materials

Site storage and protection of **SPS Envirowall** materials must be in accordance with the manufacturer's instructions. It is essential to keep the render and liquid based materials out of high and low temperatures, as this could cause issues with the products application and performance.

Product application weather conditions

Application of the system must only be carried out in suitable weather conditions. **SPS Envirowall** renders, and adhesives must not be applied in rain, fog, or mist, at temperatures below 5°C or above 30°C or (application may start +3°C and rising and cease at +5°C and falling) or if exposure to frost is likely to occur during drying. SPS Envirowall renders must not be applied to saturated, or frost bound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the rendering drying out too rapidly.



10 Stages to CS1 & CS2 System Installation

- Stage 1** ➤ Fitting Main sheathing board
- Stage 2** ➤ Application of CS fillets
- Stage 3** ➤ Fit drainage channels
- Stage 4** ➤ Fit Basebead
- Stage 5** ➤ Fit Fire Barriers
- Stage 6** ➤ Application of Mineral Wool insulation boards
- Stage 7** ➤ Fit Movement bead profiles
- Stage 8** ➤ Application of beads and Profiles
- Stage 9** ➤ Apply basecoat layer with reinforcement mesh
- Stage 10** ➤ Application of Finishes

Stage 1 – Application of Main SFS Sheathing Board

1. Store Specified Sheathing Boards in a dry atmosphere and off the ground.
2. Do not drag the Specified Sheathing Boards off the pallet.

3. Lift Specified Sheathing Boards clear of the pallet to prevent damage. Always carry or lift the Specified Sheathing Boards on their sides with 2 persons.

4. Do not install cracked or damaged Specified Sheathing Boards unless the damaged sections are removed by using the board as cut pieces.

5. Specified Sheathing Boards can be fixed horizontally (landscape) or vertically (portrait)

6. All Specified Sheathing Boards vertical edges must be located over SFS studs

7. Specified Sheathing Boards must have minimum 2mm maximum 5mm gap at joints

8. Fix Specified Sheathing Boards back through the into the SFS studs using fixings as per project specification fixings at maximum 300mm centres vertically and 600mm centres horizontally. Fixings to be minimum 15mm in from Specified Sheathing Boards edge.

9. Seal the board joints with a fire rated mastic and if required taped and liquid joint sealer.

Please refer to Fixing Pattern drawings for visual representation.

As required by the project designers or the sheathing board manufacturers a Breather Membrane should be installed at this stage.

Stage 2 - Application of CS1 Fillets- Width of system fillets CS1 100mm/125mm

The **CS1** fillets are vertically fixed through the sheathing board into the LGS frame using wing tip self-drilling self-tapping screws located centrally down the fillets at 300mm centres and never just into the sheathing board alone. The fillets are cut through at floor levels and fixings are located to ensure the two floors are not "locked" together and to allow the passage of the open state intumescent strip to pass horizontally uninterrupted around the floor levels. They are also cut through at the base of the system and any other locations that fire barriers are positioned.

Stage 3 - Application of Drainage Channels

PVC or Aluminium profiled channels are installed diagonally at a 1 degree angle, to the depth of the cavity and oversailing the window head plus any fire barriers around the opening by 150mm, to capture water and divert it around the heads of openings. They are fixed at 300mm centres and the back leg is sealed to ensure any water flows into the channel. The CS fillets are cut through to allow the angled drainage channel to be fixed onto the face of the main sheathing board.

Stage 4 - Application of Basebead & trims

Aluminium Basebead Application

Apply the drainage profile along the back edge behind the aluminium base profile at the Damp Proof Course level and not below, using specified zinc coated screws at max. 300mm centres ensuring that the base profile is always fixed in the last plug slot on both ends of the back

plate. Unevenness in the wall surface should be overcome using packing shims.

At building corners, cut and mitre the base profile to size. Join mitred edges with basebead connection clips. Apply the clip on PVC bead with mesh ready to receive the basecoat application.

Stage 5 - Application of Fire Barriers

Open State Cavity Barriers

Using the appropriate size specified open state intumescent strip fire barrier located at floor levels and base of system, or any termination of the CS systems in a horizontal position. The intumescent strips are mechanically fixed at 250mm centres using a stainless-steel fixing suitable for the substrate type. At the external corners, ensure that the intumescent strip passes across the cavity on one side of the corner and touches the back of the insulation boards, this will ensure intumescent closure at the far corner junction of the two facades.

Full Depth Cavity Barriers

Compartmentation – Party Wall Junctions

Vertical fire barriers at compartmentation zones can be achieved by using a full CS system depth 200mm wide section of mineral Wool (Rock fibre) insulation board, closing off the cavity. Using Envirobed adhesive fully covering the back of the mineral wool fire barrier applied to the face of the main SFS sheathing board, along with stainless-steel fixings with stainless-steel washers at maximum of 500mm centres or a minimum of two per shorter sections of board.

Openings & Outer Termination Perimeters of CS Cavities

Using the Calcium Silicate (Y Wall) CS fillets as cavity barriers around windows and doors/apertures, including the sills, mechanically fix the CS fillets all around the openings.

Stage 6 - Application of Mineral Wool Insulation boards

- 1. MW Insulation** should be stored in original packaging and off the floor in a dry environment.
- 2.** Base track for **MW Insulation** must have drainage holes to allow trapped moisture to escape post completion of finish coatings.
- 3.** Apply the insulation boards side edges centrally on the CS1 fillets ensuring they are in contact with the adjacent board leaving no gaps. No insulation boards measuring less than 200mm in height or width should be used L-Shaped insulation boards to be installed at the corners of all window/door or any type of aperture on the façade. Boards to be fixed using stagger bond pattern with alternate interlocking up all corners of building and apertures.

Mineral Wool Insulation boards are fixed with the following pattern:

- 1.** Minimum of 3 fixings across the centre line of the MW Insulation boards to offer temporary securement. **Please see project specification for exact fixing number based on site wind loads.**
- 2.** Primary fixings are secured through the **wet base coat and reinforcing mesh** in a maximum 400 x 400mm grid pattern in line with the project

wind load calculation. These primary fixings through the mesh layer must be covered with a 100 x 100mm scrim patch. **Please see project specification for exact fixing pattern / grid based on site wind loads.**

- 3.** All calculated loadings for the fixings are based on them being secured back to the Sheathing Board.
 - 4.** Additional stainless-steel fixing at a rate of 1 per m² must be used to retain the reinforced base coat in the event of a fire. This fixing is installed in addition to the above fixings and must be installed through the base coat and reinforcing mesh and covered with a 100 x 100mm scrim patch.
- Please consult with third party warranty providers as they may require this fixing per insulation batt.**
- 5.** Offcuts less than 200mm of MW Insulation should not be used
 - 6.** Gaps between MW Insulation boards should be filled with slithers of insulation, or if less than 5mm, FR grade expanding foam and trimmed once set
 - 7.** No board joints should be present at corners of openings. MW Insulation boards should be fitted in an 'L' shape to reduce stress being applied.
 - 8.** Leading edge of the MW Insulation should be protected from inclement weather.

Please refer to Fixing Pattern drawings which shows all fixings to be used

Please refer to Fixing Pattern drawings which shows all fixings to be used

Stage 7 – Fit Movement bead profiles

If this is an EWI system question, with regards to movement joints in an insulated render system – these are required where there is a change in the substrate types that leads to shear movement such as masonry to timber or concrete to SFS or where on a structure the deflection exceeds L/360 or 15mm (whichever is greater). Otherwise, the insulated render system itself does not require movement joints unless the substrate requires one to be present through the whole wall section to the outside face, determined by the project structural engineer or unless it is a brick slip finish being applied to the EWI system.

Stage 8 – Application of beads and profiles

Set all corner beads, stop beads, APU beads and any surface mounted movement beads to line and level bedded on with basecoat prior to the main basecoating layer being applied.

Stage 9 – Application of Base Coat

1. No work mixing of any basecoat preparations should proceed on site during a time when the temperature is below 5°C or above 30°C or if exposure to frost is likely to occur during drying. **SPS Envirowall** renders must not be applied to saturated, or frost bound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the

rendering drying out too rapidly. Do not apply material in rain, fog or mist.

2. **EnviroRend** base coat should not be applied to wet insulation boards.

3. Using a notched trowel apply **EnviroRend** base coat to the MW Insulation ensuring it bites into the fibres of the MW Insulation. Total thickness of **EnviroRend** base coat is 3 to 5mm including slurry coat.

4. Whilst **EnviroRend** base coat is wet, install High Performance Mesh with 100mm overlapping joints.

a. High Performance Mesh must be in the top third of the base coat

b. At corners of all opening install minimum 300 x 500mm stress patch at 45 degrees to main mesh layer over the top of the main mesh

5. Primary insulation fixings must be installed through the mesh whilst the base coat is still wet in line with project fixing pattern, typically maximum 400 x 400mm grid pattern.

6. All fixing heads covered with a 100 x 100mm mesh patch prior to application of final slurry coat and allowed to dry.

7. Once set, apply final slurry coat at 1 – 2mm thick (total build up no more than 5mm) over High Performance Mesh and float ready for the application of the finish

surface contamination.

3. Remove any surface contamination if found and if required, brush the façade to remove surface dust.

a. Using a brush or roller apply EnviroSil silicon primer (tinted when using non-pastel colours) ensuring an even and consistent coating is achieved. Must be touch dry prior to the application of the main **EnviroSil** silicon render finish.

b. Using a plastic or stainless-steel float, apply a tight coat of **EnviroSil** silicon render. Using consistent pressure, ensure any excess material is removed prior to texturing taking the **EnviroSil** silicon render down to the specified grain size

4. Using a plastic float, lightly roll the float in a circular or figure of 8 pattern to roll the texture ensuring no bald spots are created

5. Any excess material on the float must be removed to ensure a clean consistent finish. **This excess material must not be used again as there will be no grain**

6. It is key to ensure all operatives use the same float type, thickness and are all textured in the same direction and pattern to create an even consistent finish.

Application of EnviroMin Mineral Render

1. No work on bonding, pointing and mixing of any adhesive preparations

should proceed on site during a time when the temperature is below 3°C or above 25°C or if exposure to frost is likely to occur during drying. **SPS Envirowall** renders must not be applied to saturated, or frost bound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the rendering drying out too rapidly. Do not apply material in rain, fog or mist.

2. Ensure **EnviroRend** reinforcing base coat has cured and inspect for surface contamination.

3. Remove any surface contamination if found and if required, brush the façade to remove surface dust.

4. Using a brush or roller apply Silicon Primer (tinted when using non-pastel colours) ensuring an even and consistent coating is achieved. Must be touch dry prior to the application of the main **EnviroMin Mineral Render** finish. Consult Benx Technical Team for use of primer requirements.

5. Using a paddle mixer, mix one 25kg bag of **EnviroMin Mineral Render** with 6.5 to 7 litres of cold clean water for 5 minutes. Leave to stand for 2 minutes and then whisk again for 2 minutes ensuring a consistent mix and grain dispersion.

6. Using a plastic or stainless-steel float, apply a tight coat of **EnviroMin Mineral Render**. Using consistent pressure, ensure any excess material is removed prior to texturing taking the EnviroMin Mineral Render down to the specified grain size

- a. Using a plastic float, lightly roll the float in a circular or figure of 8 pattern to roll the texture ensuring no bald spots are created
- b. Any excess material on the float must be removed to ensure a clean consistent finish. This excess material must not be used again as there will be no grain
- c. It is key to ensure all operatives use the same float type, thickness and are all textured in the same direction and pattern to create an even consistent finish.

Application of Speedy Slip adhesive and slips

1. No work on bonding, pointing and mixing of any adhesive preparations should proceed on site during a time when the temperature is below 50C or above 300C or if exposure to frost is likely to occur during drying. **SPS Envirowall** renders must not be applied to saturated, or frost bound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the rendering drying out too rapidly. Do not apply material in rain, fog or mist.
2. Ensure **EnviroRend** reinforcing base coat has cured and inspect for surface contamination.
3. Remove any surface contamination if found and if required, brush the façade to remove surface dust.
4. Mark out the area to be covered with the **Speedy Slip** flexible brick slips evenly with chalk lines and agree brick pattern bond style and

areas for cut bricks with the client.

- a. Use existing lines such as windows and door lines as starting points when marking out the height and bond.
 - b. Consider the use of soldier coursing at the base and head of the façade if it is not to brick dimensions
5. Mix **Speedy Slip** Combination Bedding Adhesive and Pointing Mortar thoroughly within its tub prior to application.
 6. Apply using a 4mm notched trowel with the notches running perpendicular to the length of the brick tile
 - a. Apply an area no more than can be covered in 30 minutes
 7. Apply the **Speedy Slip** Flexible Brick Tile to the **Speedy Slip** Combination Bedding Adhesive and Pointing Mortar by floating and pressing into place
 - a. In colder weather it is advisable to store the **Speedy Slip** Flexible Brick Tile in a heated unit to aid application and reduce the risk of breakages
 - b. **Speedy Slip** Flexible Brick Tile can be cut using scissors or a sharp Stanley knife
 8. Once **Speedy Slip** Flexible Brick Tiles have been applied the pointing process should begin immediately. Using a damp 10mm brush, spread the Speedy Slip Combination Bedding Adhesive and Pointing Mortar between the Speedy Slip Flexible Brick Tiles ensuring all joints are pointed evenly.

- a. Ensure mortar is pointed consistently, i.e., all bed joints first or all perp joints first
- b. Speedy Slip Combination Bedding Adhesive and Pointing Mortar must fully seal all the edges of the **Speedy Slip** Flexible Brick Tiles. Inspect carefully, remove and replace any tiles that are not fully sealed.
- c. Corners are supplied preformed as **Speedy Slip** Pistol Tiles and fixed using the same method as the Speedy Slip Flexible Brick Tile.
- d. Ensure the slips are clean of any adhesive/mortar material before it is allowed to set, as this cannot be cleaned off once it has set.

Observation Application Points

1. No work on bonding, pointing and mixing of any adhesive preparations should proceed on site during a time when the temperature is below 5°C or above 30°C or if exposure to frost is likely to occur during drying. SPS Envirowall renders must not be applied to saturated, or frost bound walls and insulation boards. In sunny weather work should commence on the shady side of the building and be continued round following the sun to prevent the rendering drying out too rapidly. Do not apply material in rain, fog or mist.
2. Inspect the **EnviroSil** silicon render at completion of every 10m² to ensure an even consistent finish is achieved.
3. Keep re-mixing the material in the tubs to prevent material skinning on the surface.

Warranties & System Durability

SPS Envirowall offer a 10 year warranty on materials used in the **CS1** systems. To support this a written request is required pre-start on site to confirm that a warranty will be required at the end of the installation. This will be backed up with regular site inspections by our experienced Site Inspectors who will audit the site with a written report including stage photographs. It will be the responsibility of the installing contractor to support this process with photographic evidences of the key installation stages in between our site inspections. All materials for the system require to be procured from **SPS Envirowall** to ensure a warranty can be issued.

The systems are confirmed within our **KIWA** Certifications as when installed and maintained in accordance with the agreement holders recommendations and the agreement certificates, the system will have a service life durability of at least 30 years. The service life durability can be extended to 60 years, if all fixings fully exposed beads, trims and profiles are specified as austenitic stainless-steel and the system is subject to a suitable inspection regime and is properly maintained accordingly.



Health & Safety

The fibres as used in **SPS Envirowall** renders may irritate the skin. Protective clothing should be worn to avoid contact with both dry, unmixed material and with wet mortar. Great care must be taken to avoid contact with eyes.

When mixing SPS Envirowall materials a filter respirator should be worn.

Where excessive concentrations of dust may accumulate the measures defined in the Health and Safety Executive publication EH40/2005 Workplace exposure limits for unlisted substances should be followed. Note that EH40 is published annually, and the current edition should be followed. Any concerns regarding application, use and disposal of products please request the relevant MSDS data sheets.



For more than 20 years, Benx has been a leading innovator in the facades sector. We are constantly refining our portfolio of products, systems and services in line with our customers' requirements. In recent years, this has meant an increased focus on supplying fully certified systems and supporting modern methods of construction.

We now offer certified façade systems for most new build, retrofit and reclad project types, and, whether you are a cladding installer, a fully-fledged volumetric manufacturer or are simply seeking to reduce on-site content, we can help.

We offer you more choice whilst reducing complexity and risk. We believe our approach is the future of façades.

At our core, Benx offer a wide and varied range of building boards, providing a solution for all structural applications. From timber to steel frame, concrete to modular, high to low rise, internal to external linings and buildings with high weather exposure, we offer a solution.

Benx group are a market leader in providing innovative products and solutions; finding the latest technology is an ethos which lies at the very heart of our business and one which separates us from the competition. At the forefront of industry research and development, we constantly strive to innovate and develop our range of solutions. By providing a complete solution, from a single supplier, we can help reduce costs, time complexity and risk.

Benx work openly in collaboration with clients and supply-chain partners to mutual benefit to ensure that the most efficient and appropriate solutions can be found for every project.

At Benx we take great care to ensure that we offer a complete service, from initial advice through to delivery. Our experienced and complimentary technical support team can provide advice at all stages of your project to help you achieve your vision. We offer a service which is flexible and meets your needs whilst remaining competitive. A fully integrated fabrication service allows customers to order both boards and façades to exact size in order to reduce construction time, minimise wastage and improve environmental impact. Benx's products are specified for use in external façades, fire protection, acoustic, airtightness and decorative applications amongst other uses.



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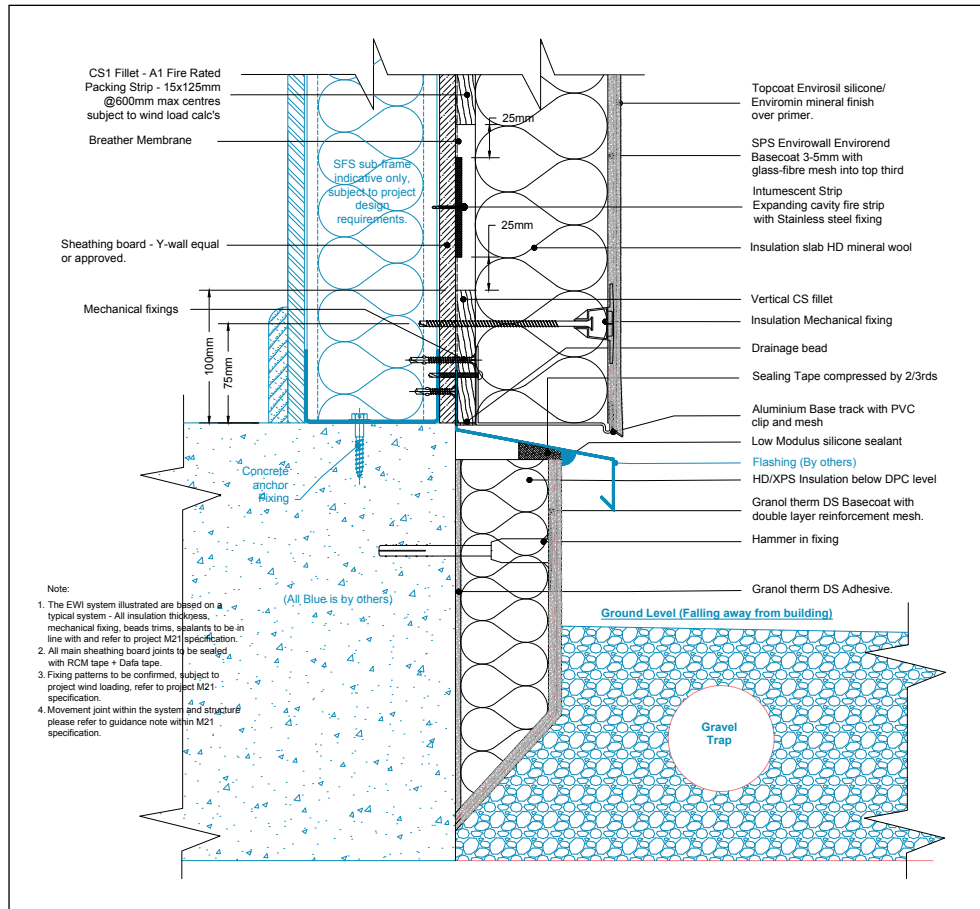
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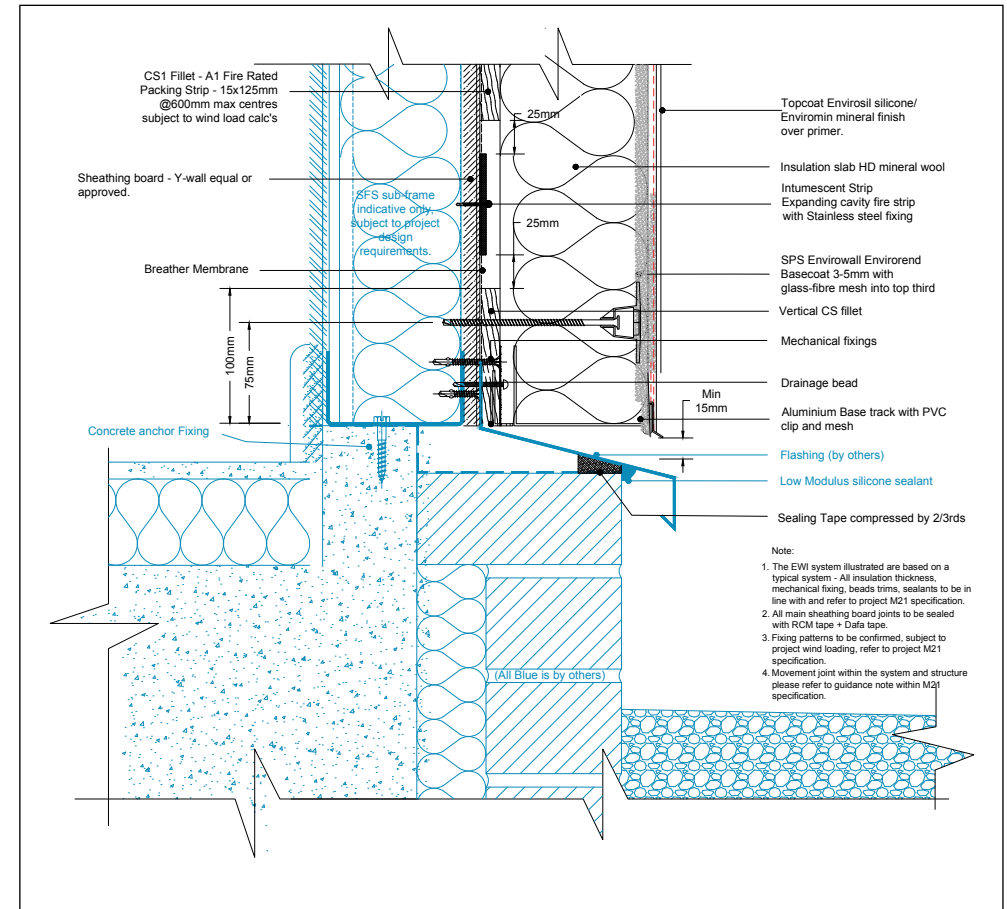
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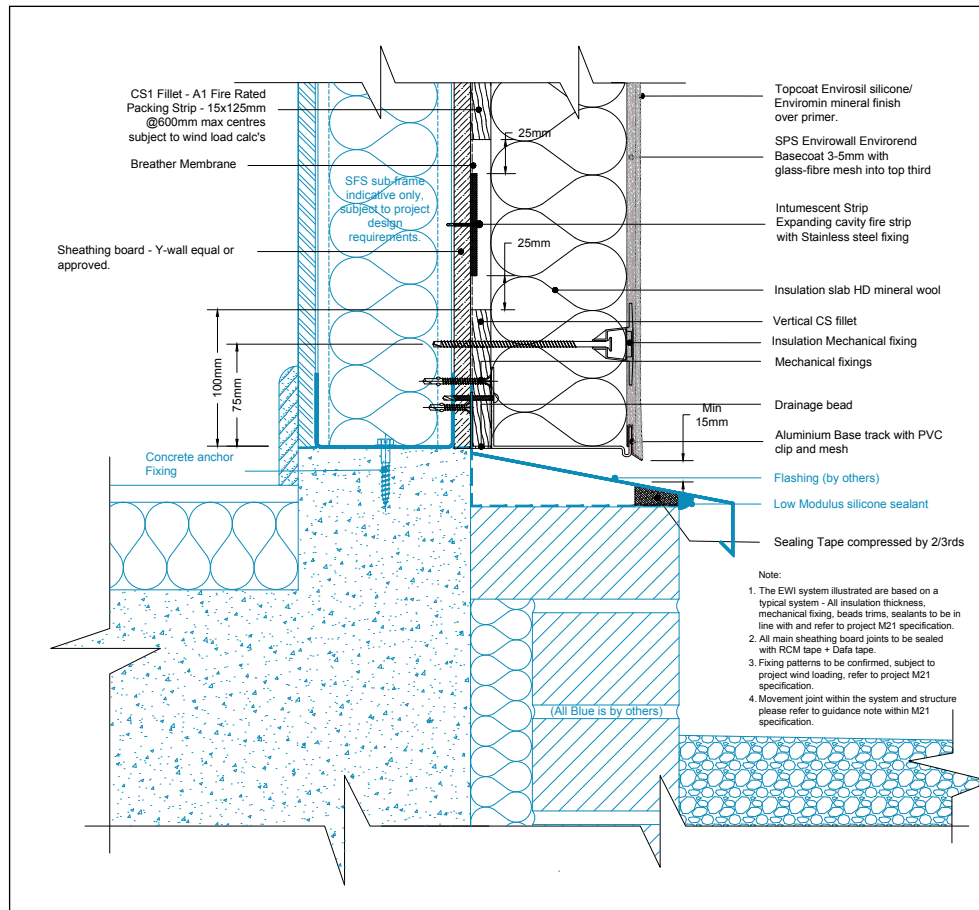
CS1 - Base Detail with Flashing cover



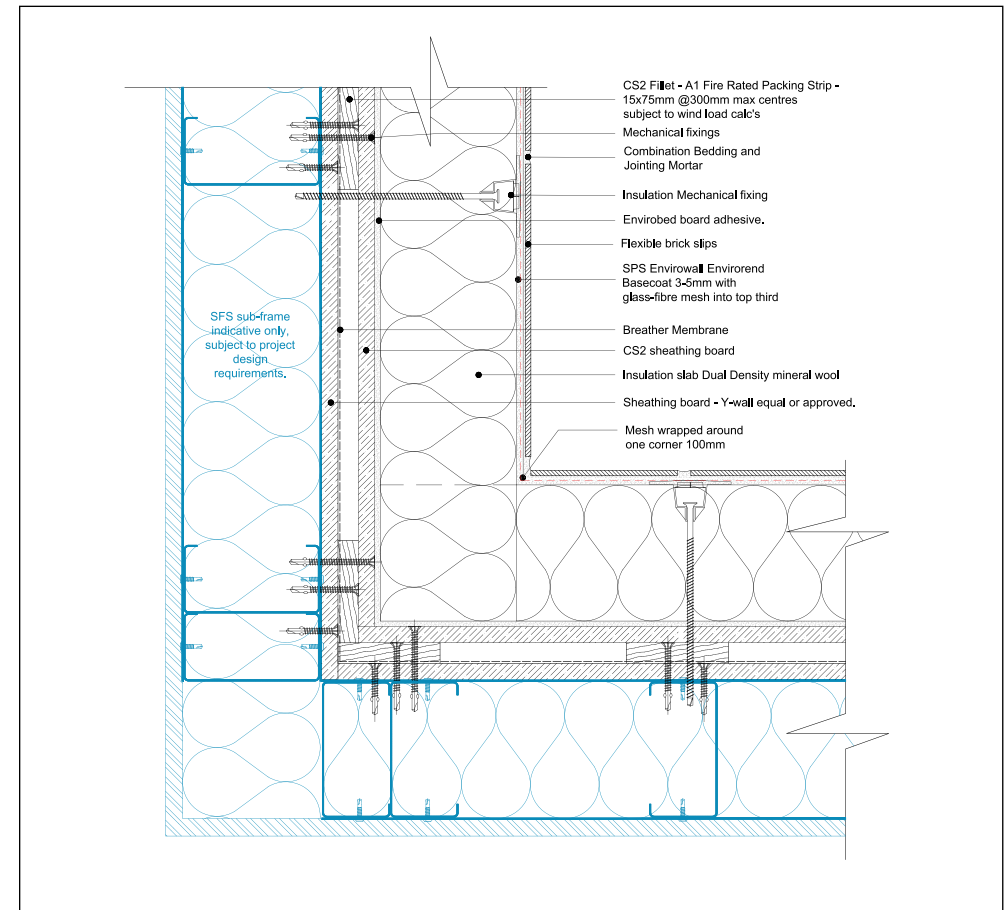
CS1 - Base Brick Detail with SFS overhang and Flashing



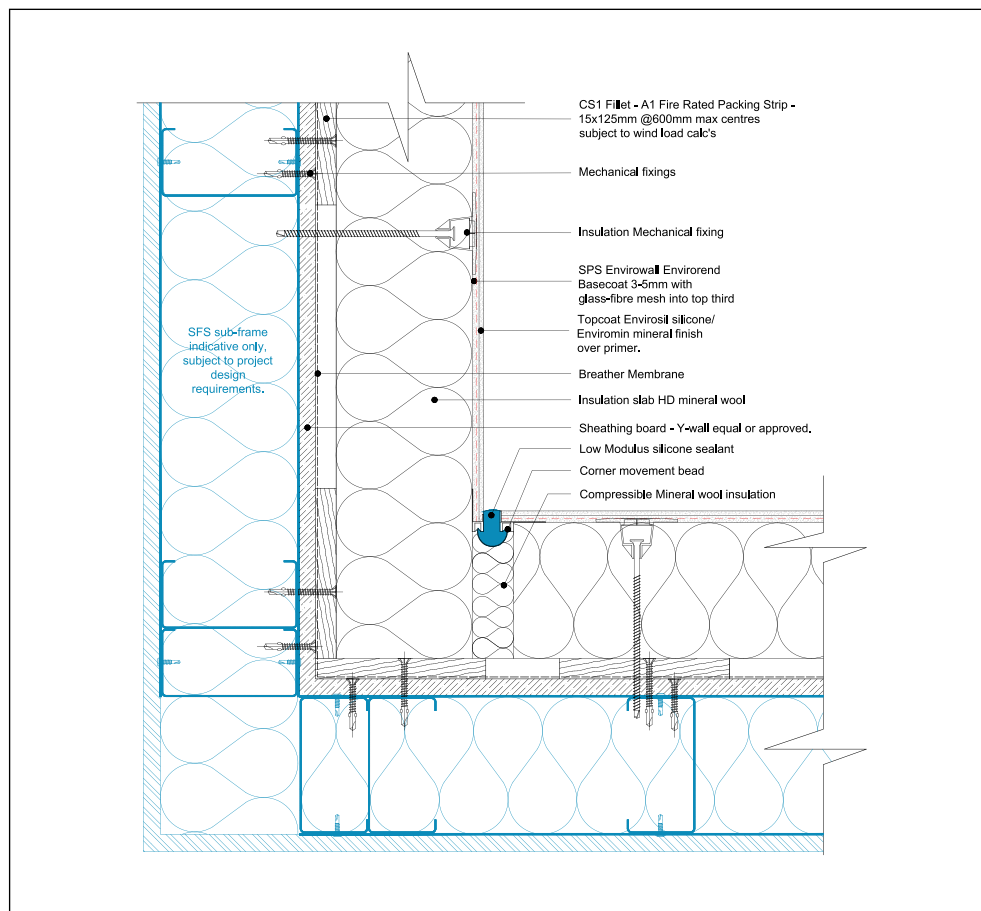
CS1 - Base Brick Detail with Flashing cover



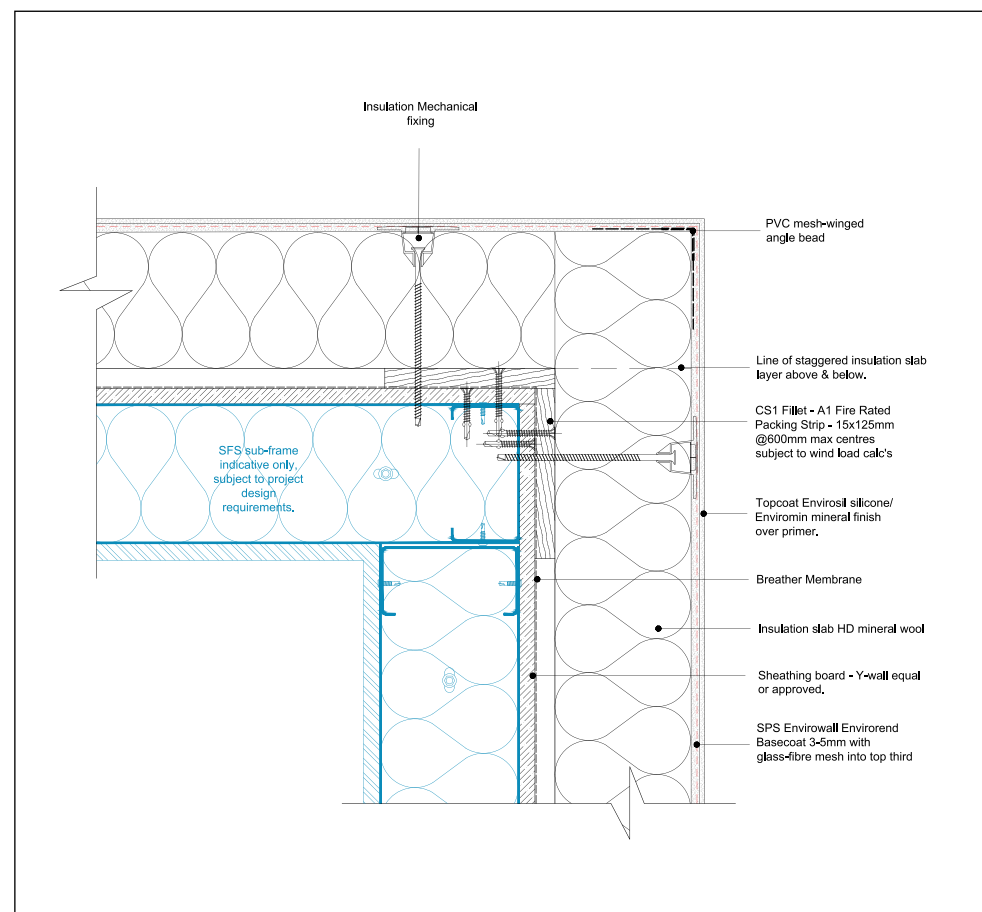
CS1 - Internal Corner



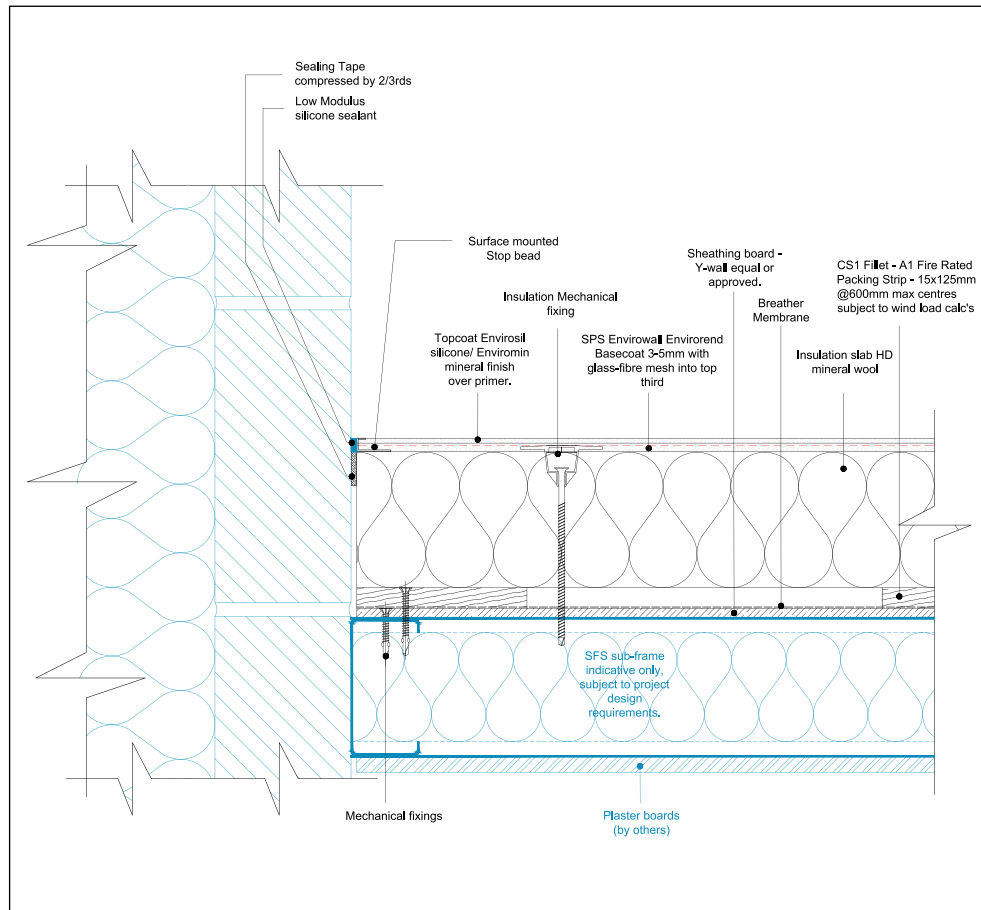
CS1 - Internal Corner with movement joint bead



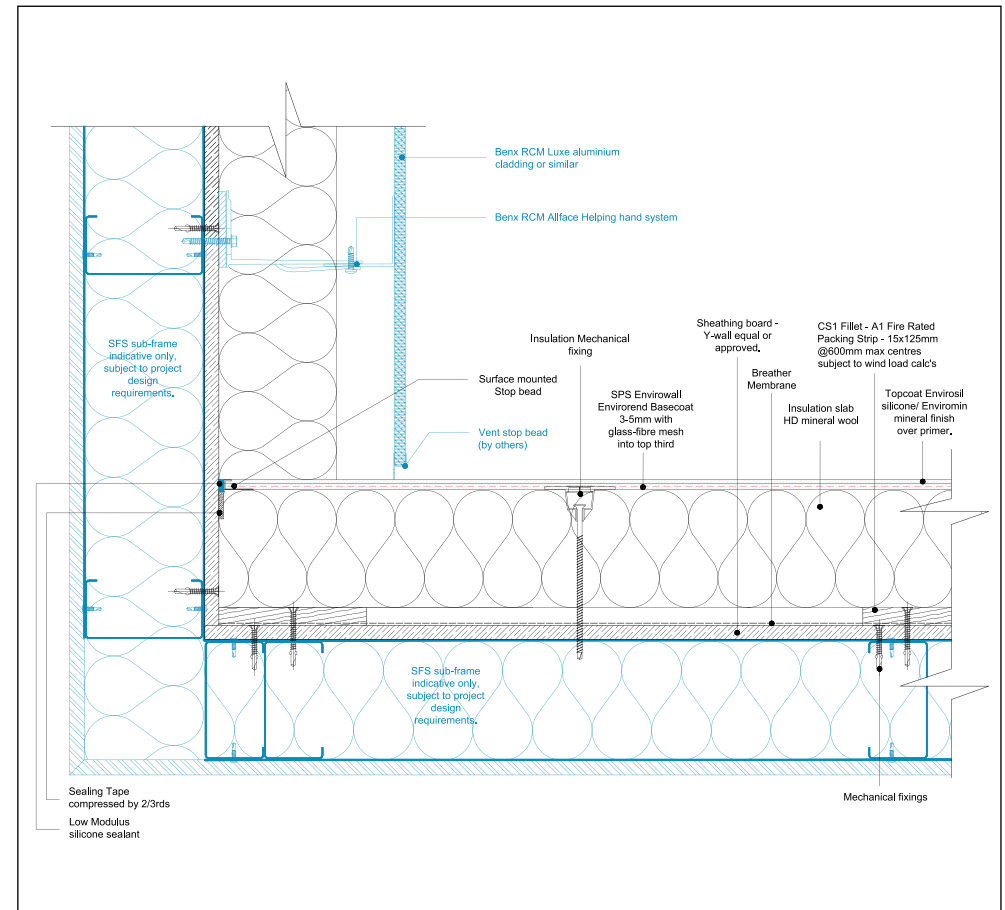
CS1 - External Corner



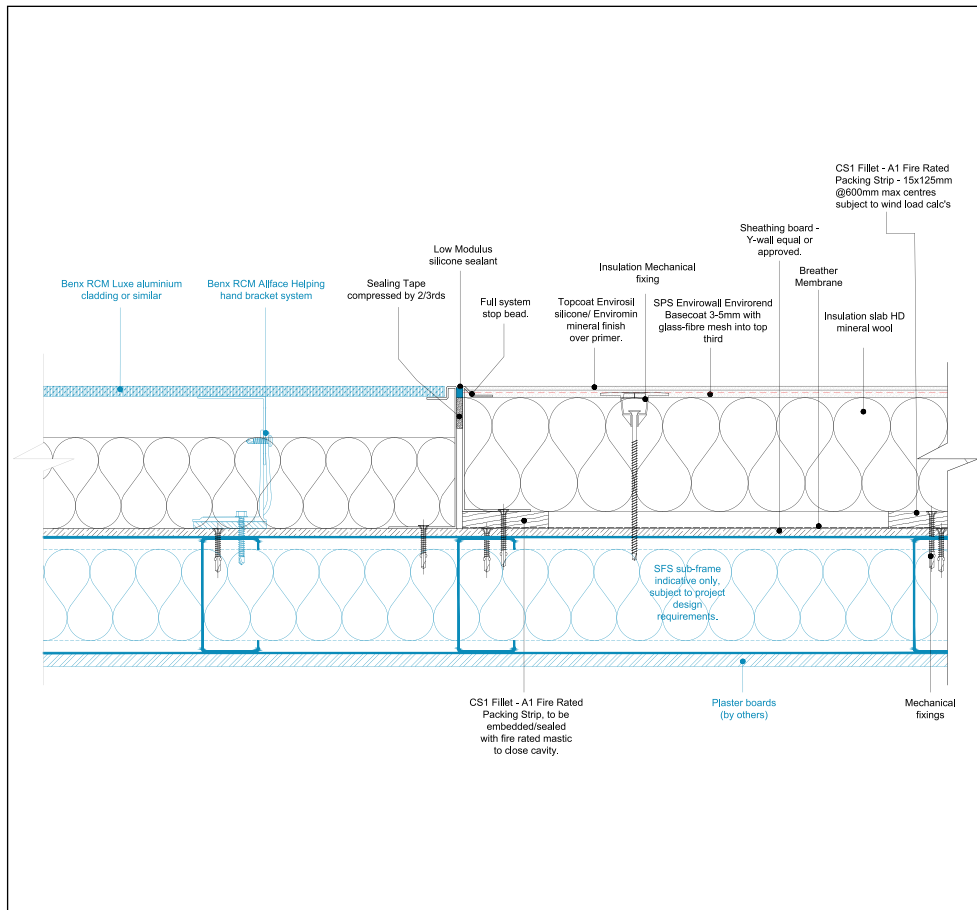
CS1 - Brick work Abutment joint



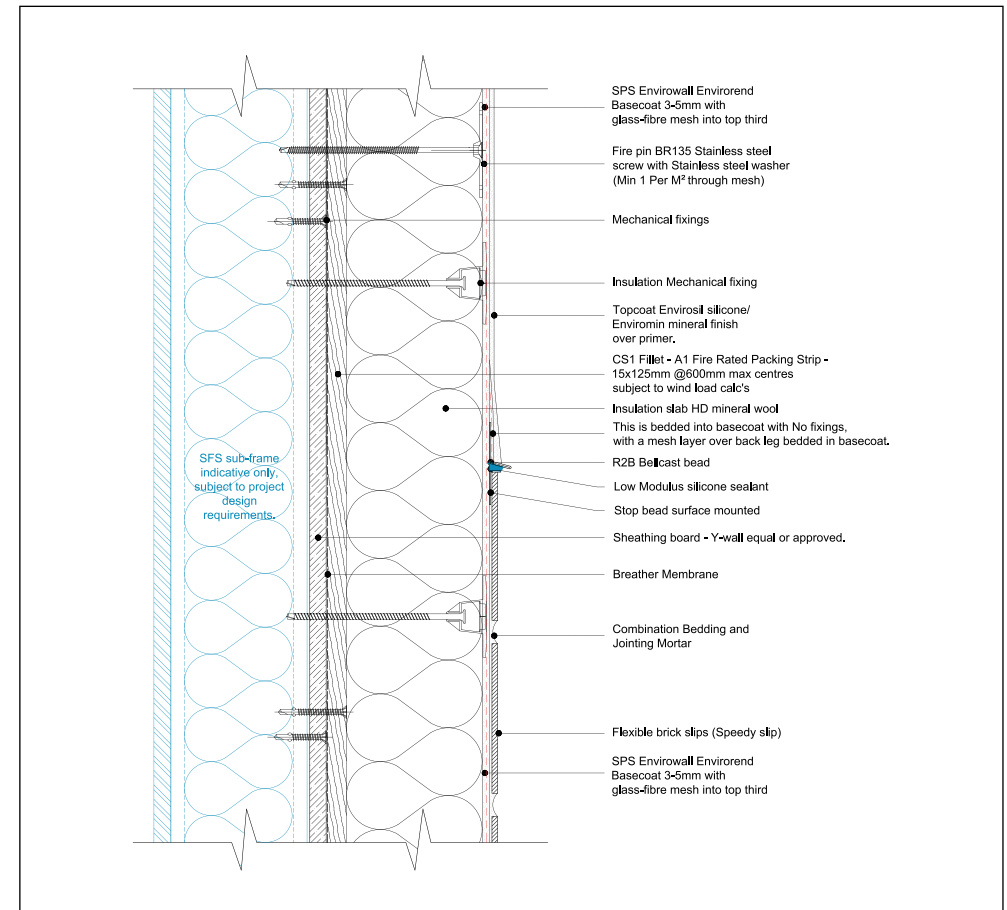
CS1 - Abutment joint with other cladding



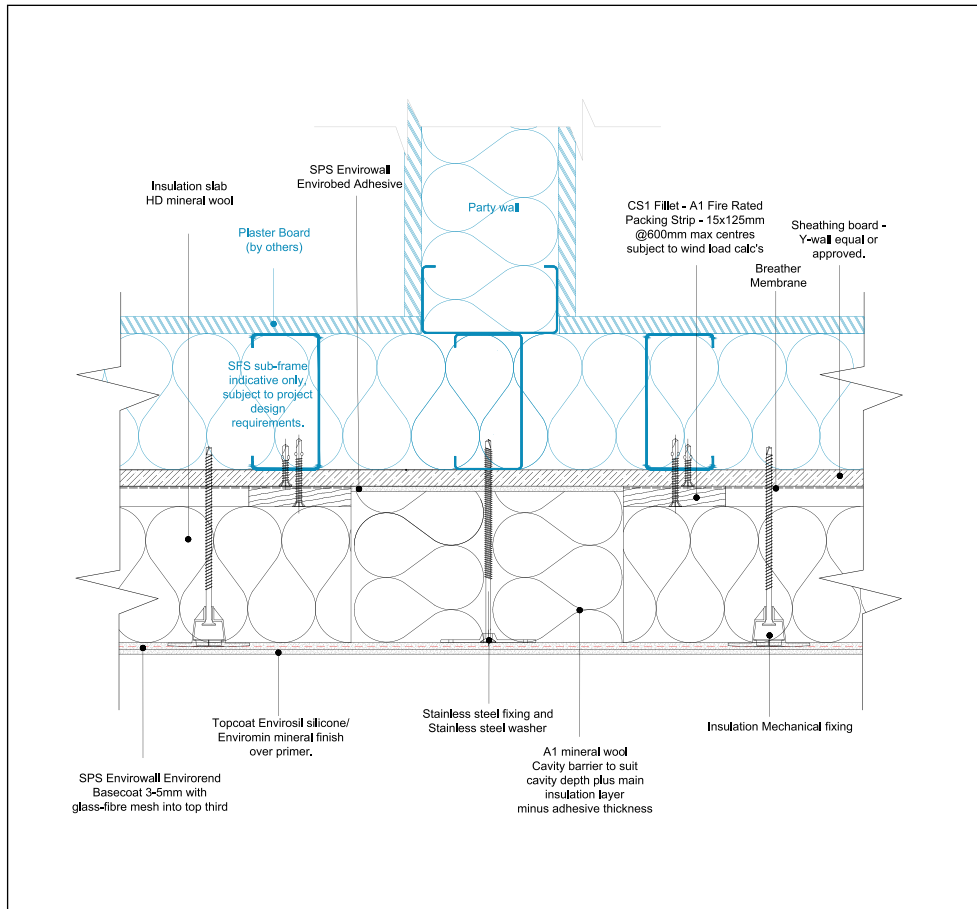
CS1 - A Joint with other cladding system



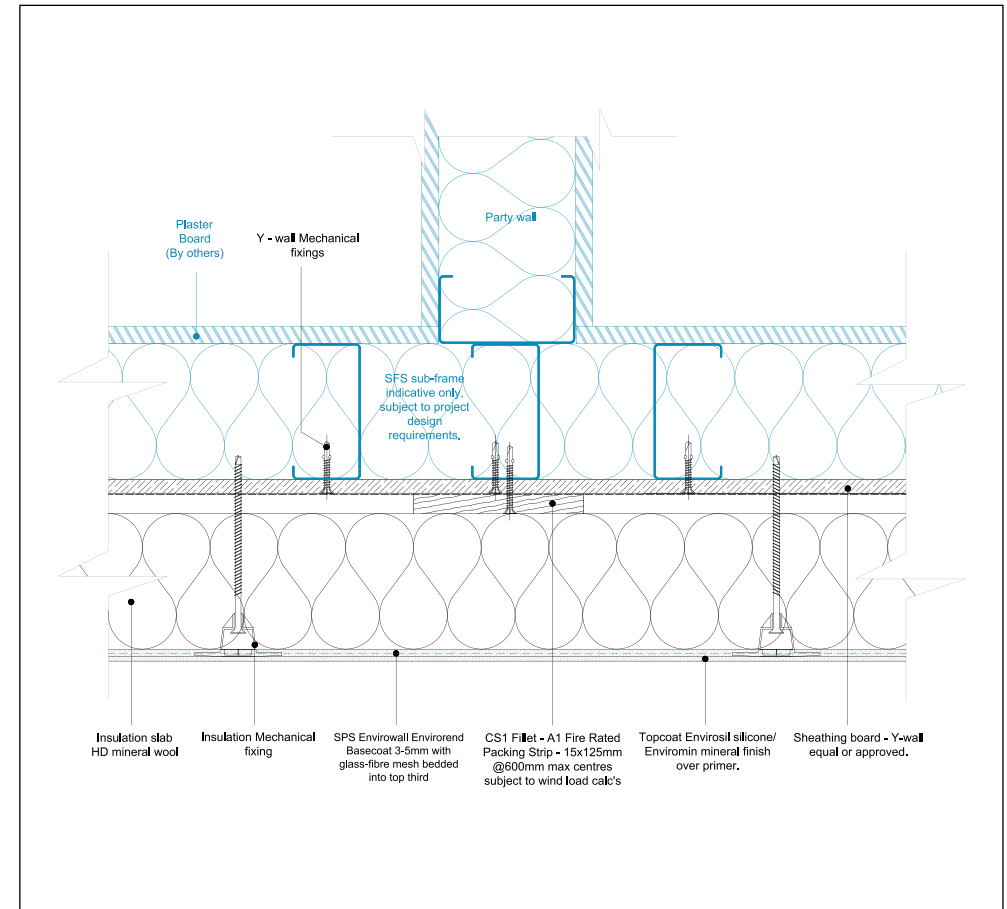
CS1 - Horizontal change of finish render and flexible brick slip



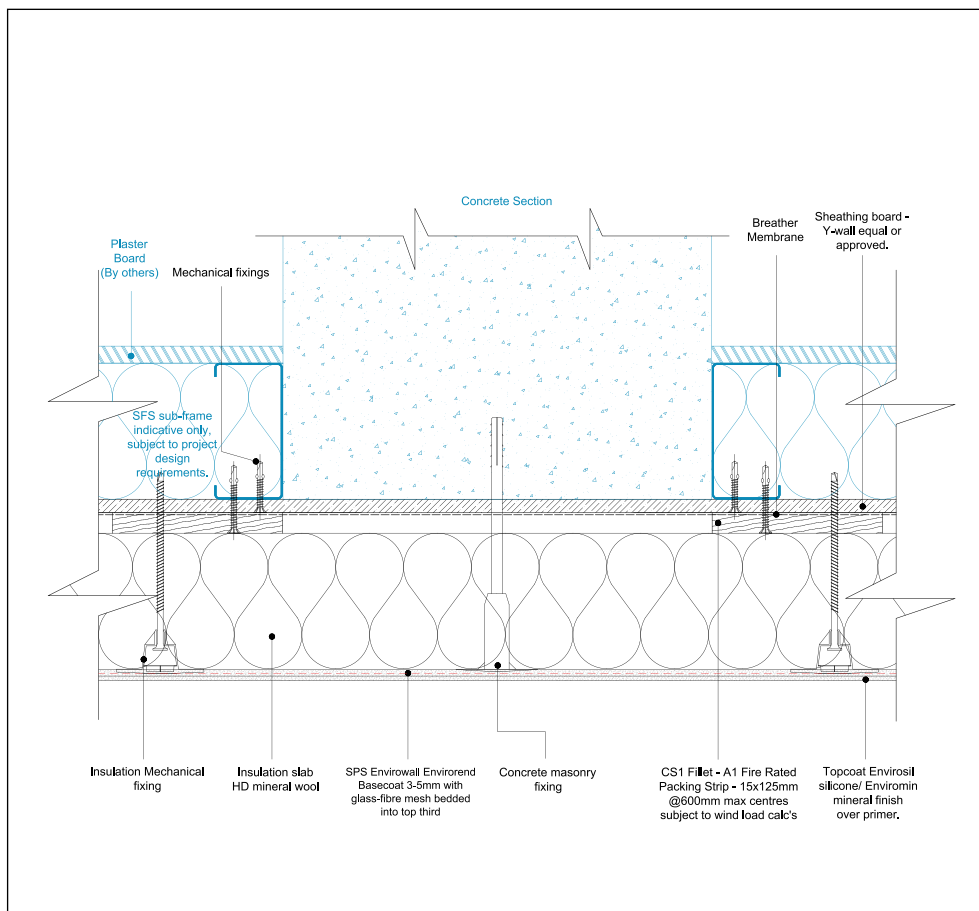
CS1 - Vertical Fire Barrier at Party Wall Compartment Junction



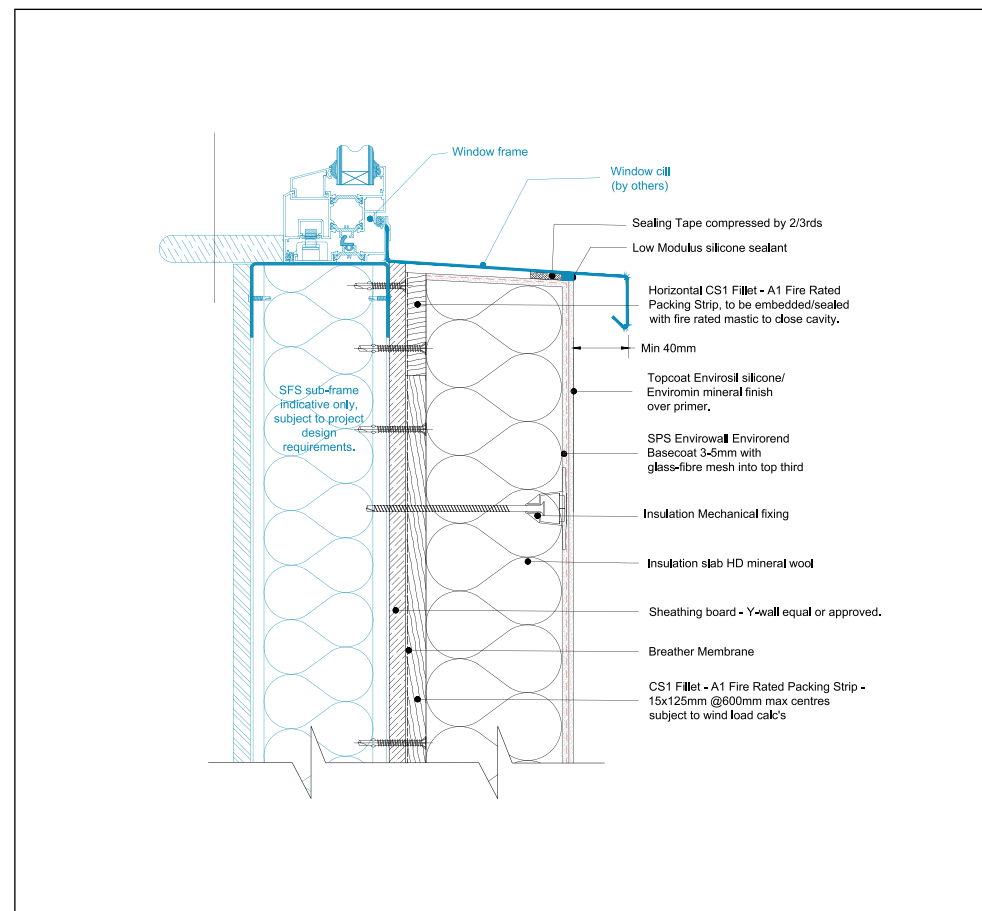
CS1 - Plan detail at party wall junction



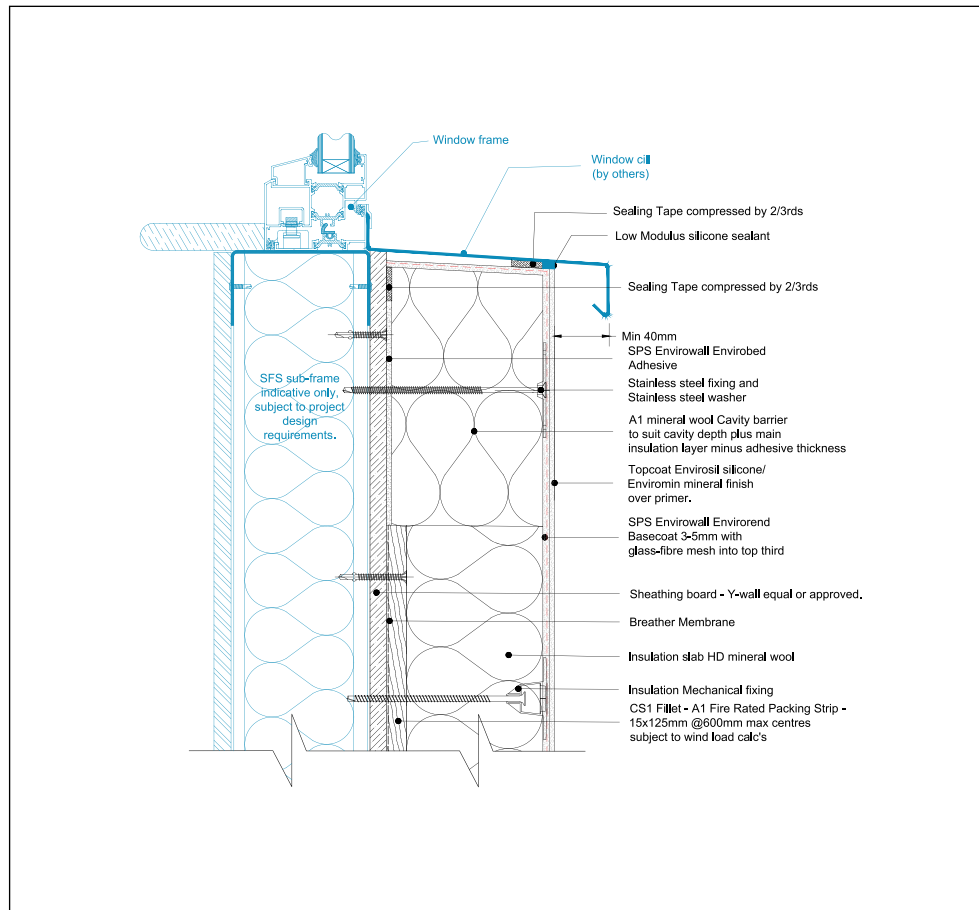
CS1 - Plan detail concrete section junction



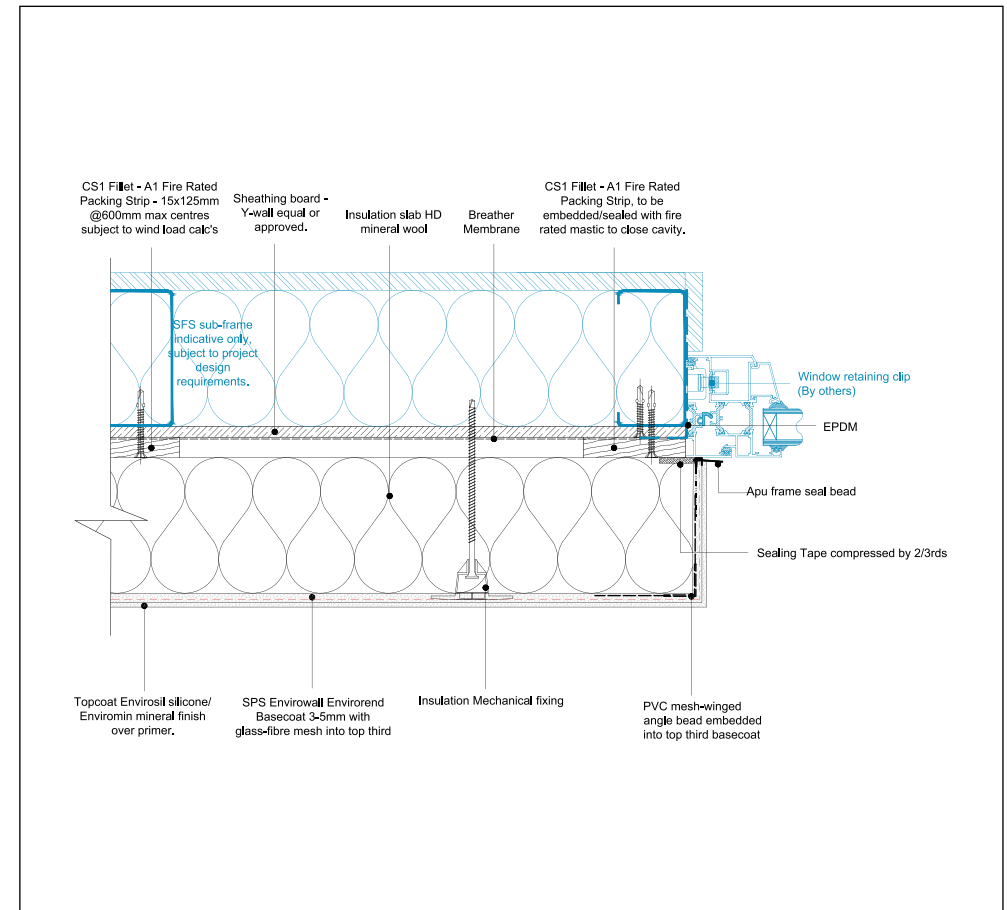
CS1 - Window Cill with CS1 A1 fillet cavity closure



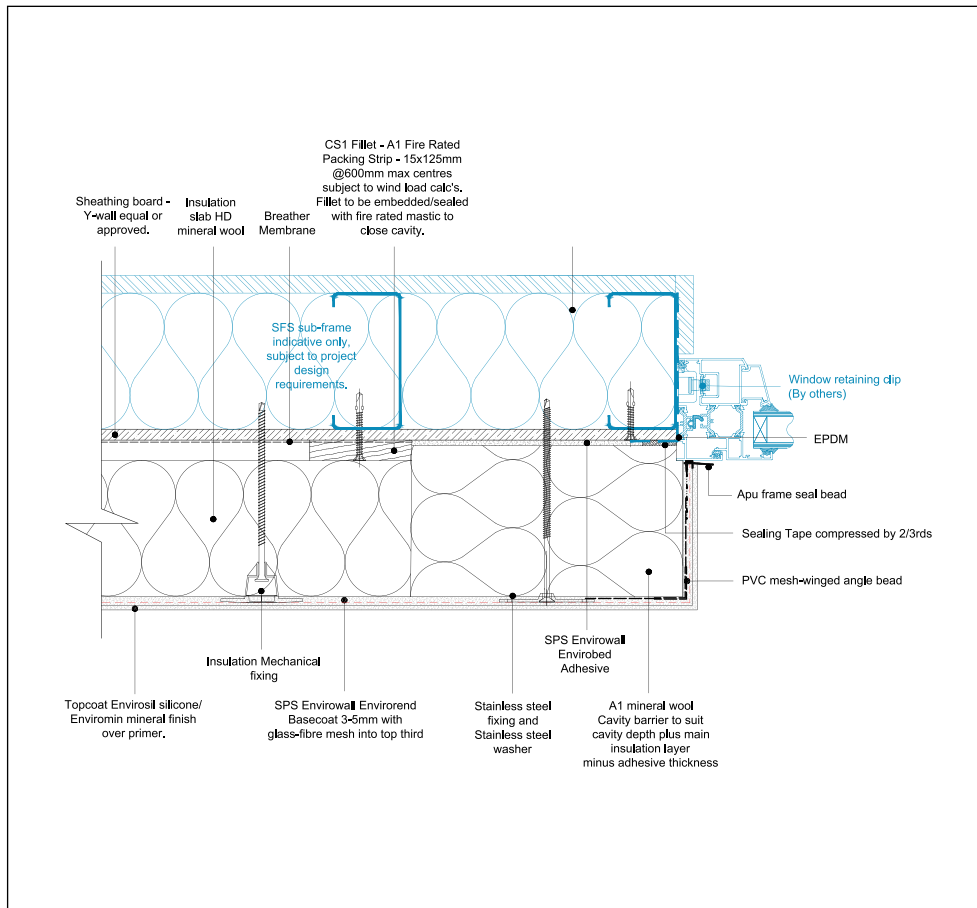
CS1 - A Window Cill with Cavity barrier closure



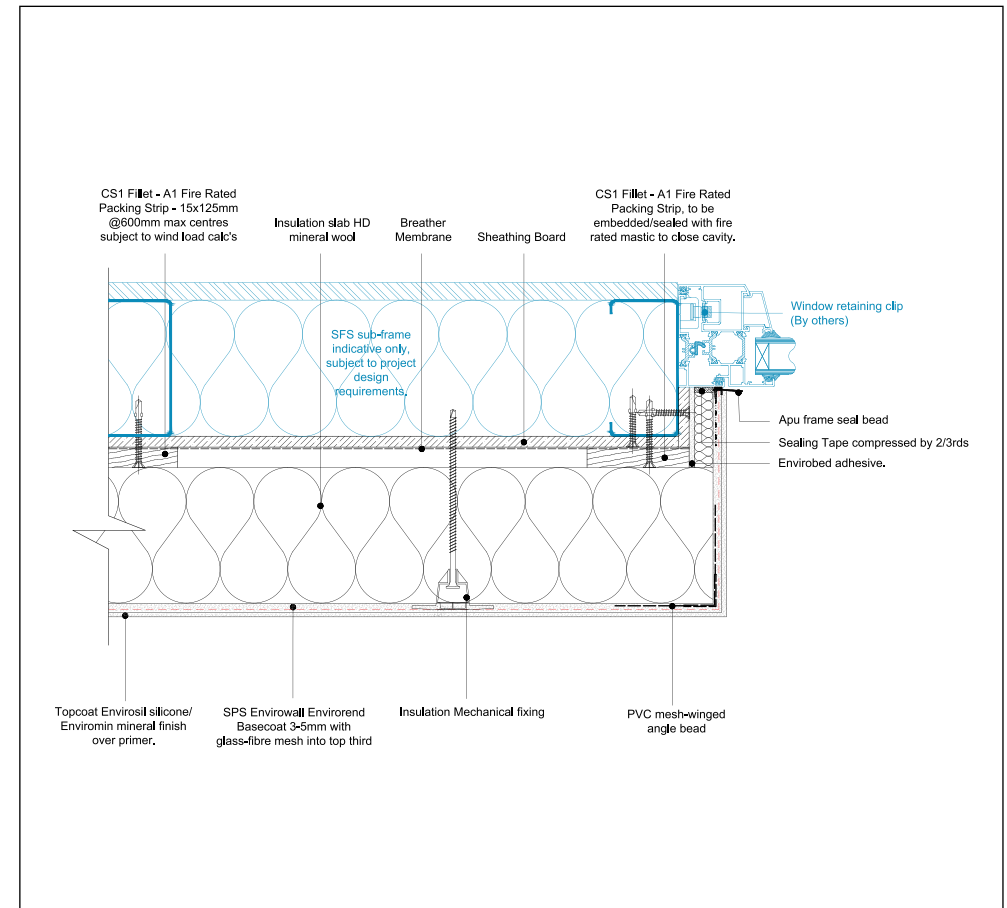
CS1 - Window Reveal with CS1 A1 fillet cavity closure



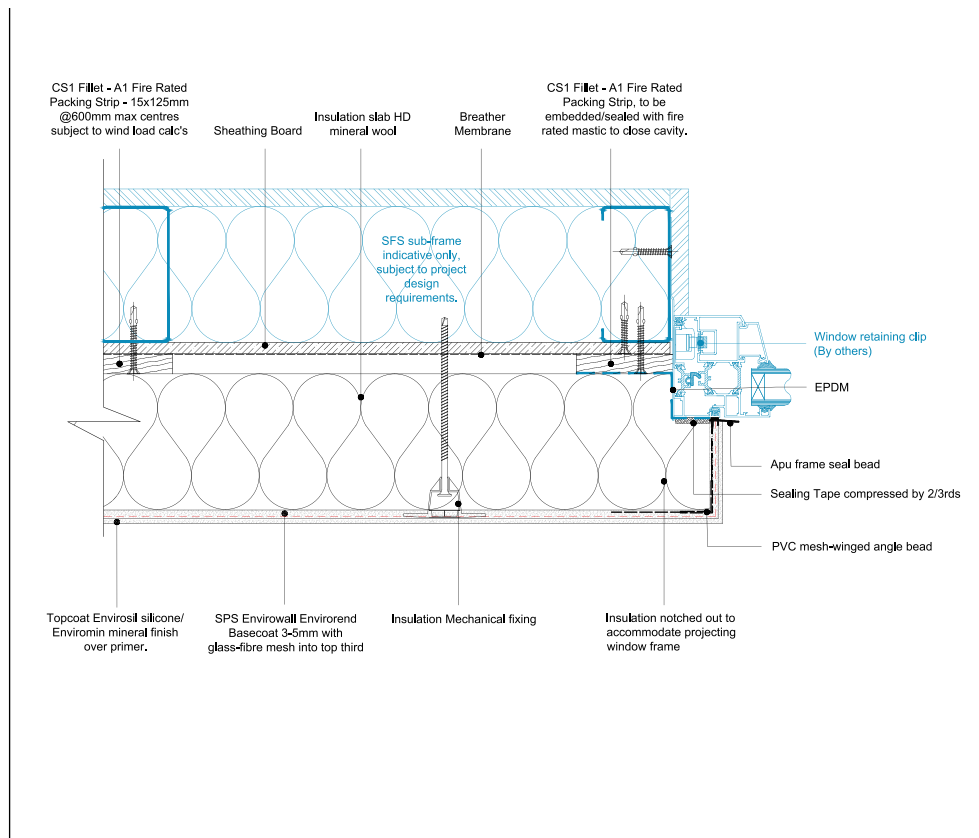
CS1 - Window Reveal with Cavity barrier closure



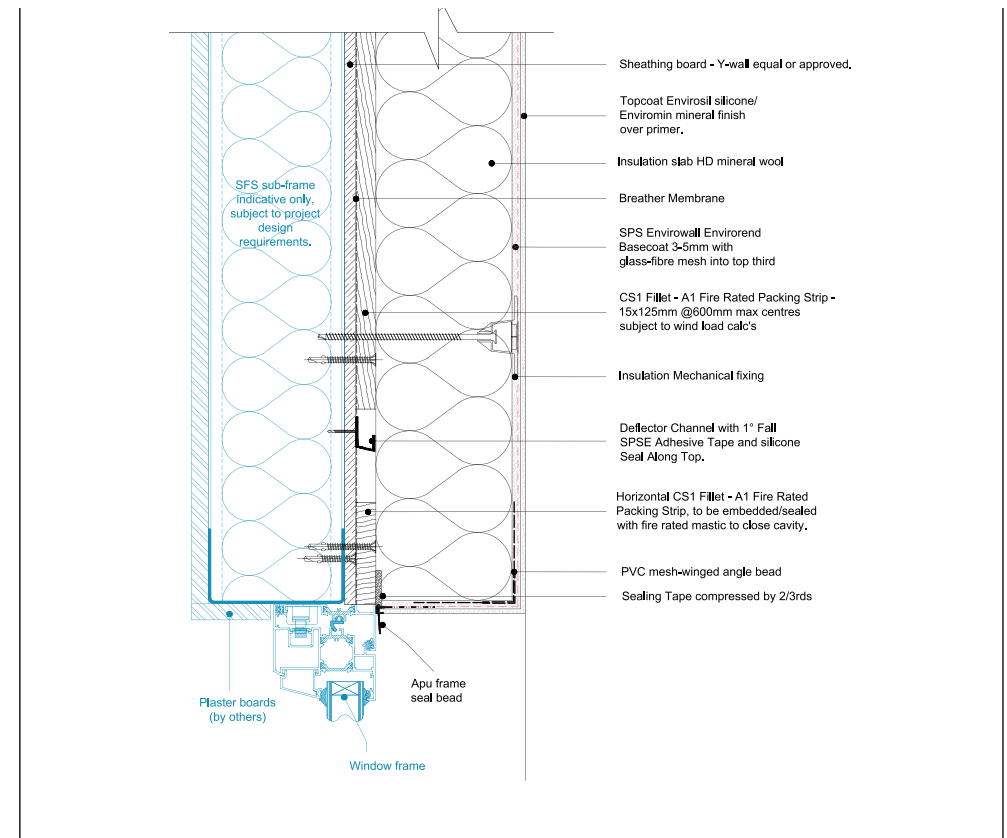
CS1 - Window Reveal with window set back



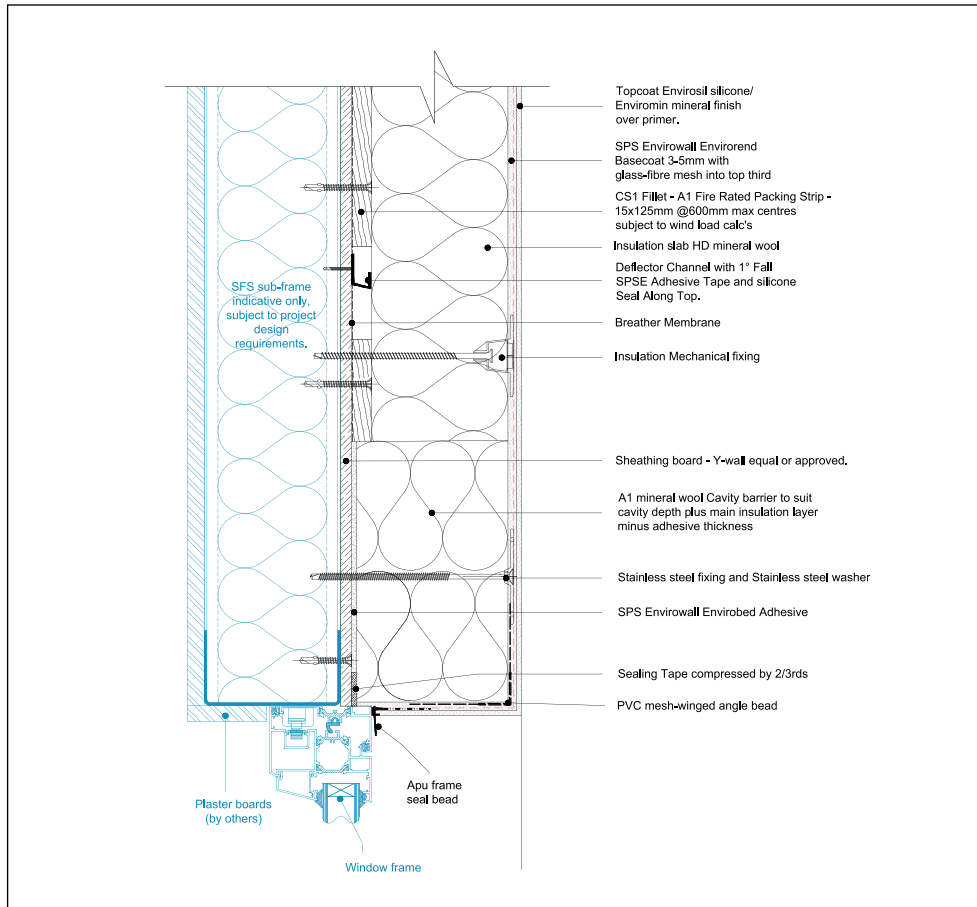
CS1 - Window Reveal with window set forward



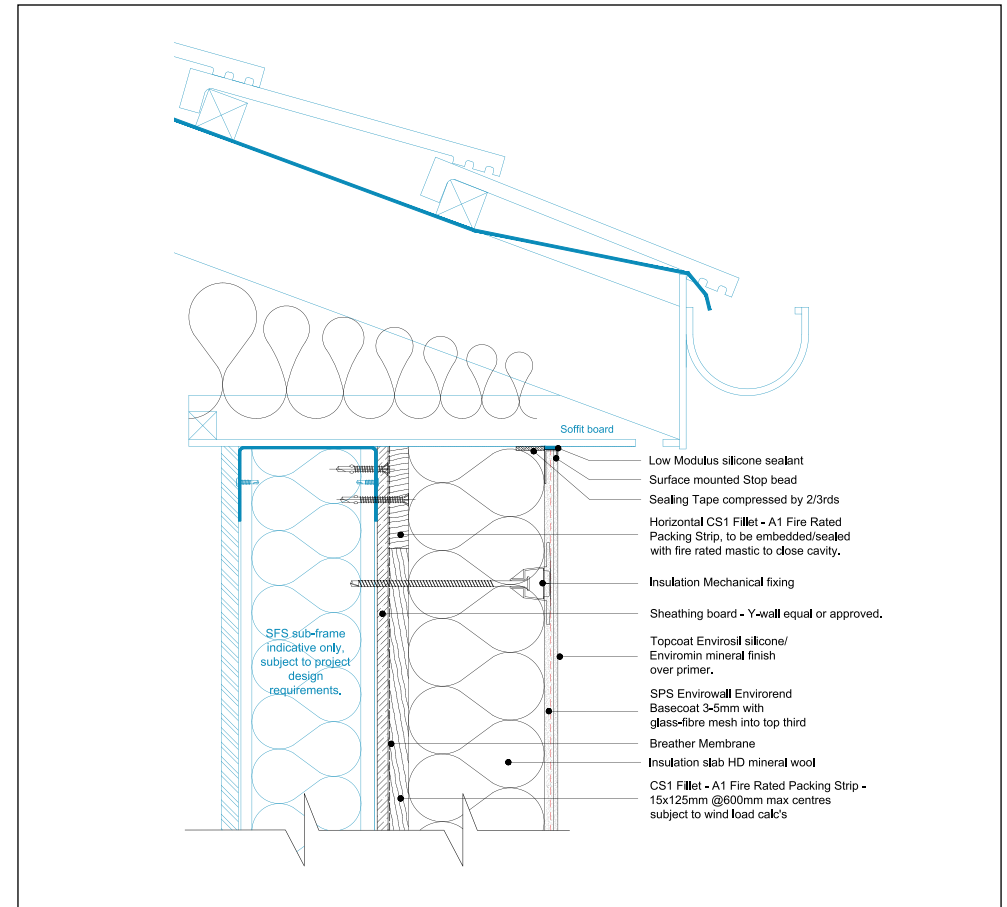
CS1 - Window Head with CS1 A1 fillet cavity closure



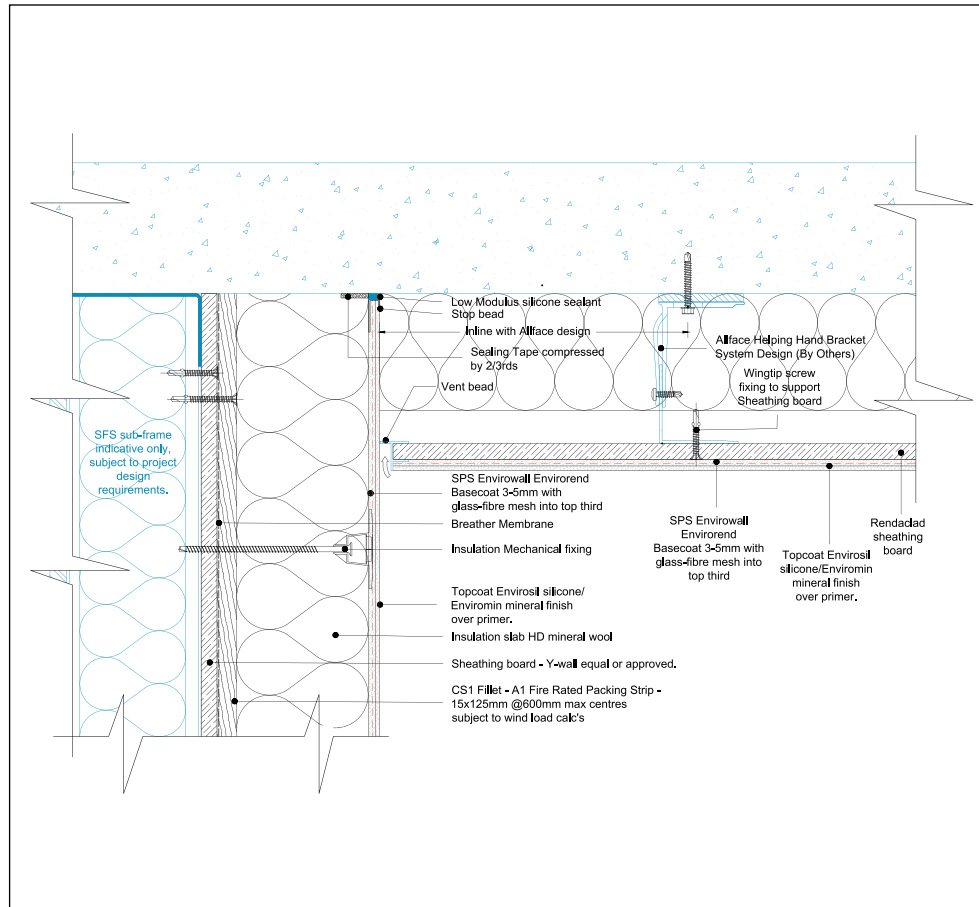
CS1 - Window Head with Cavity barrier closure



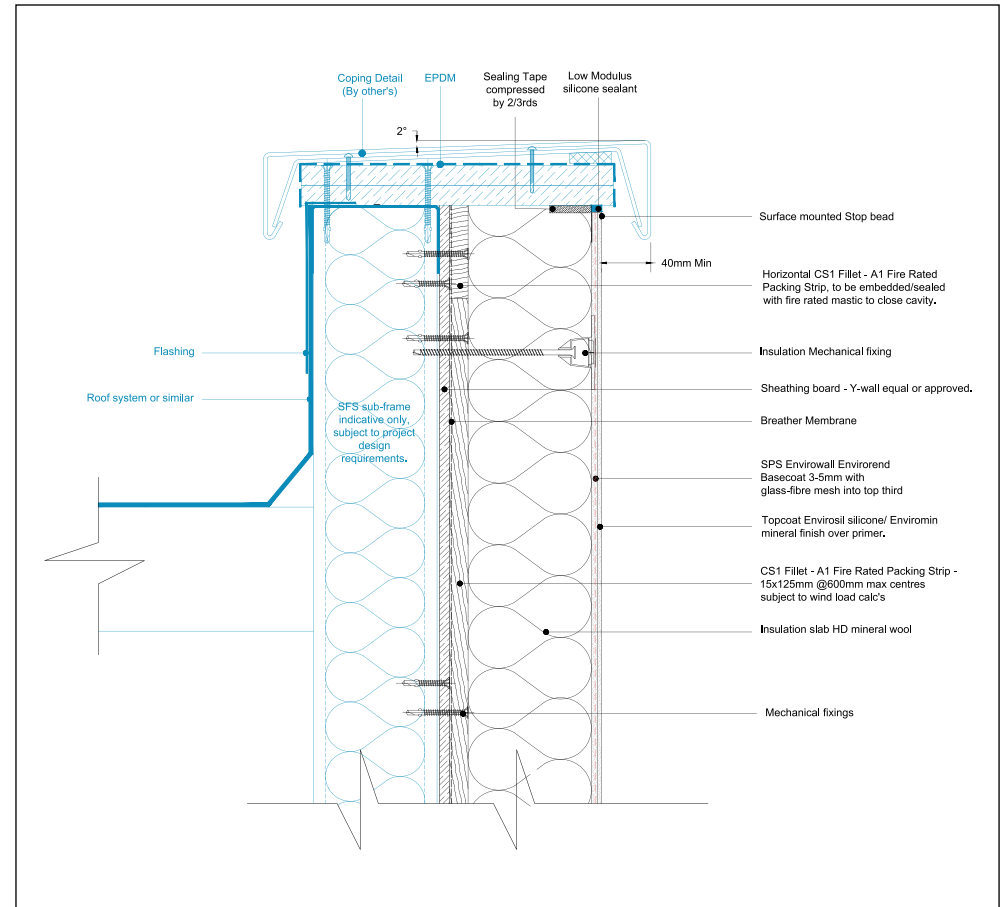
CS1 - Soffit Detail



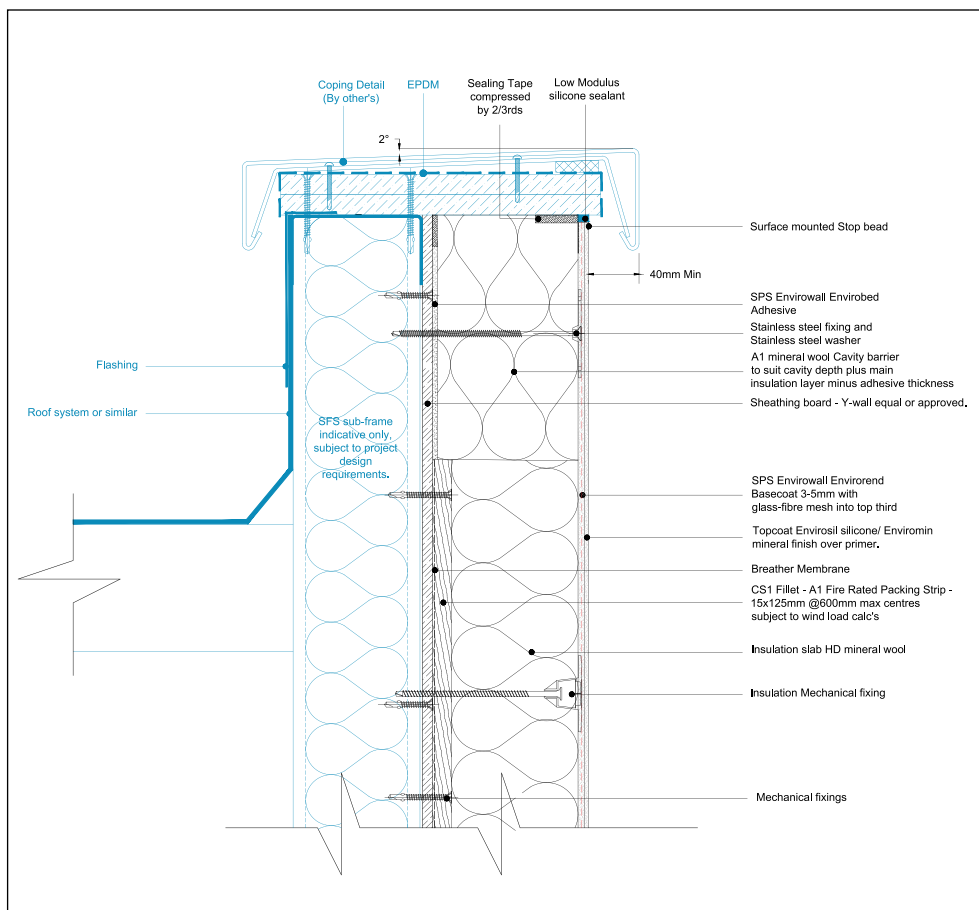
CS1 - Suspended soffit Detail



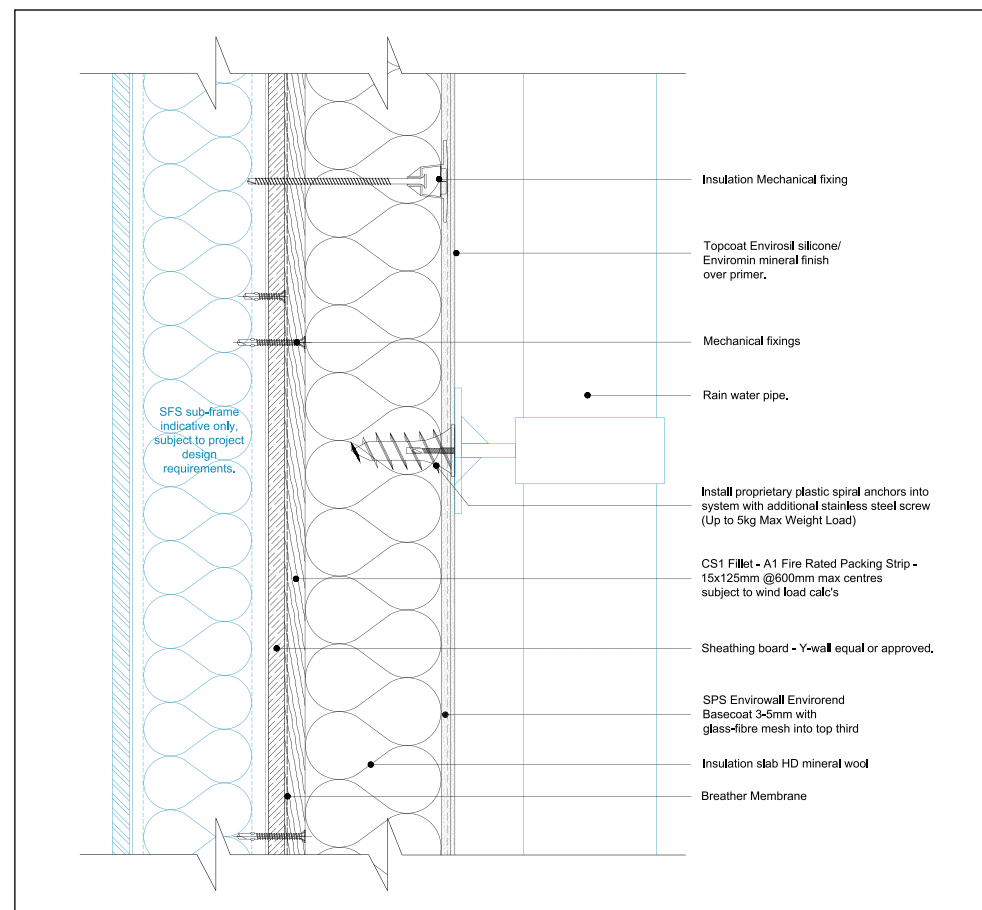
CS1 - Coping Detail



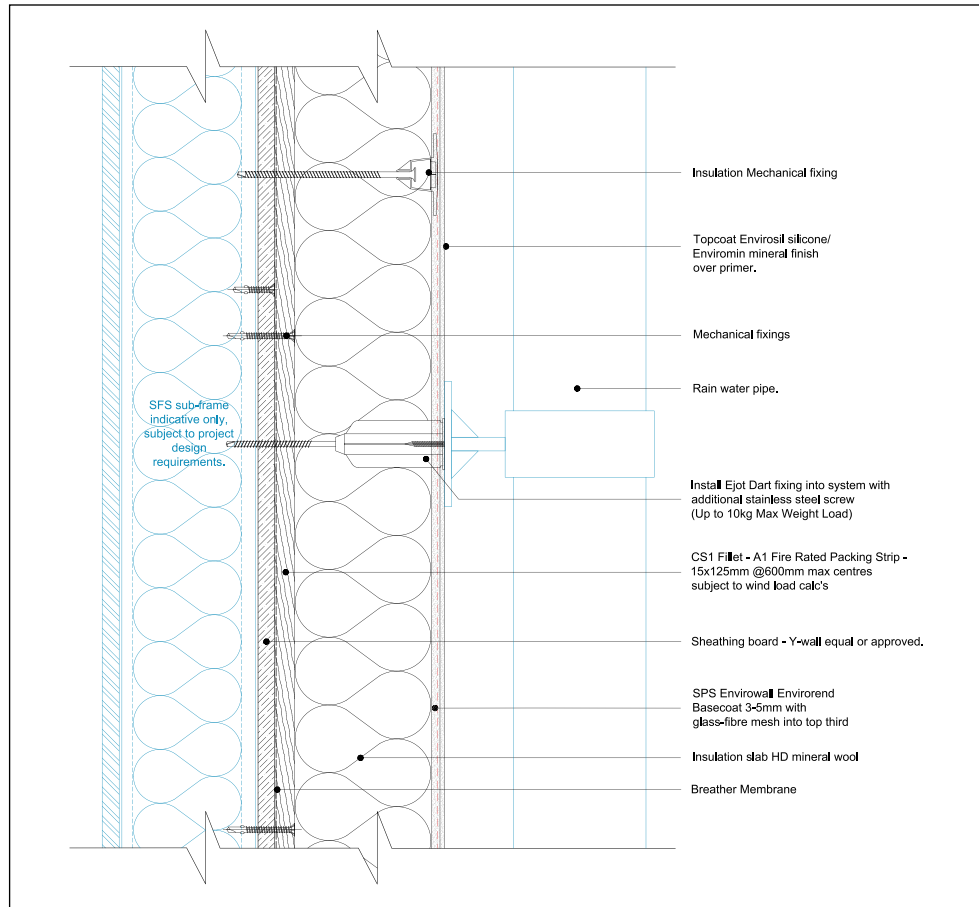
CS1 - Coping Detail with Mineral wool cavity stop



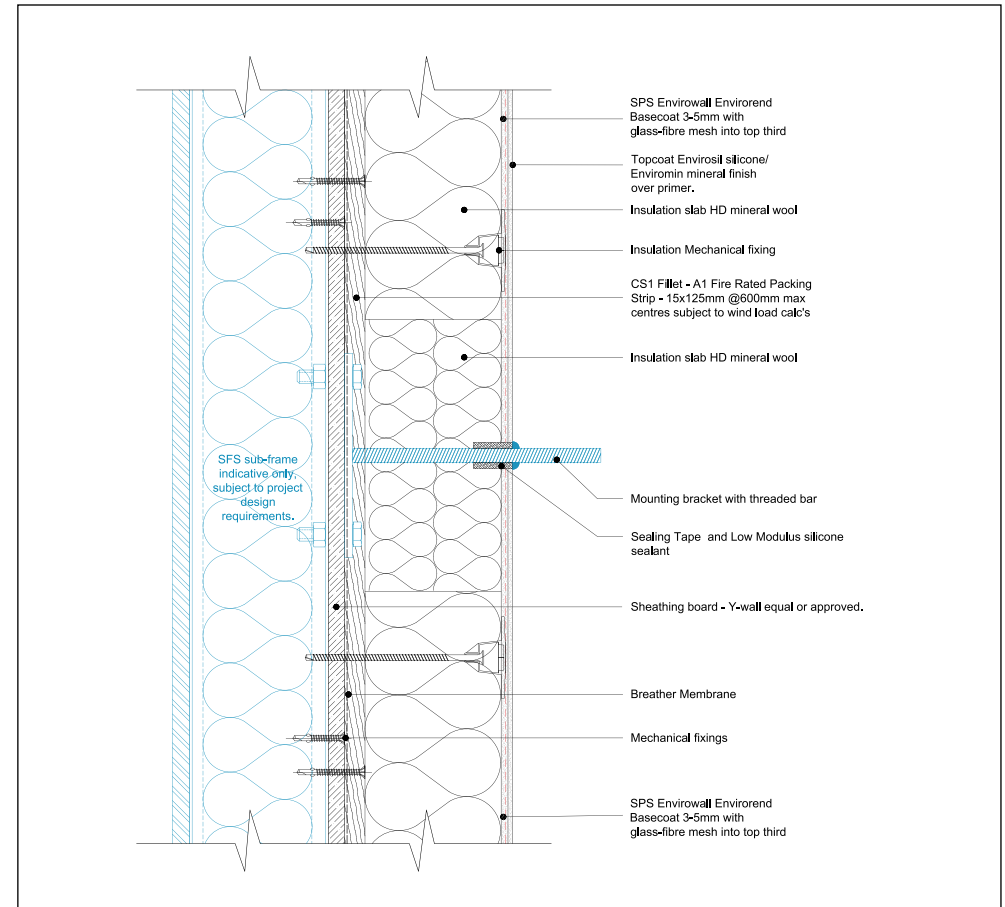
CS1 - Light weight attachment fixing detail (Opt 1)



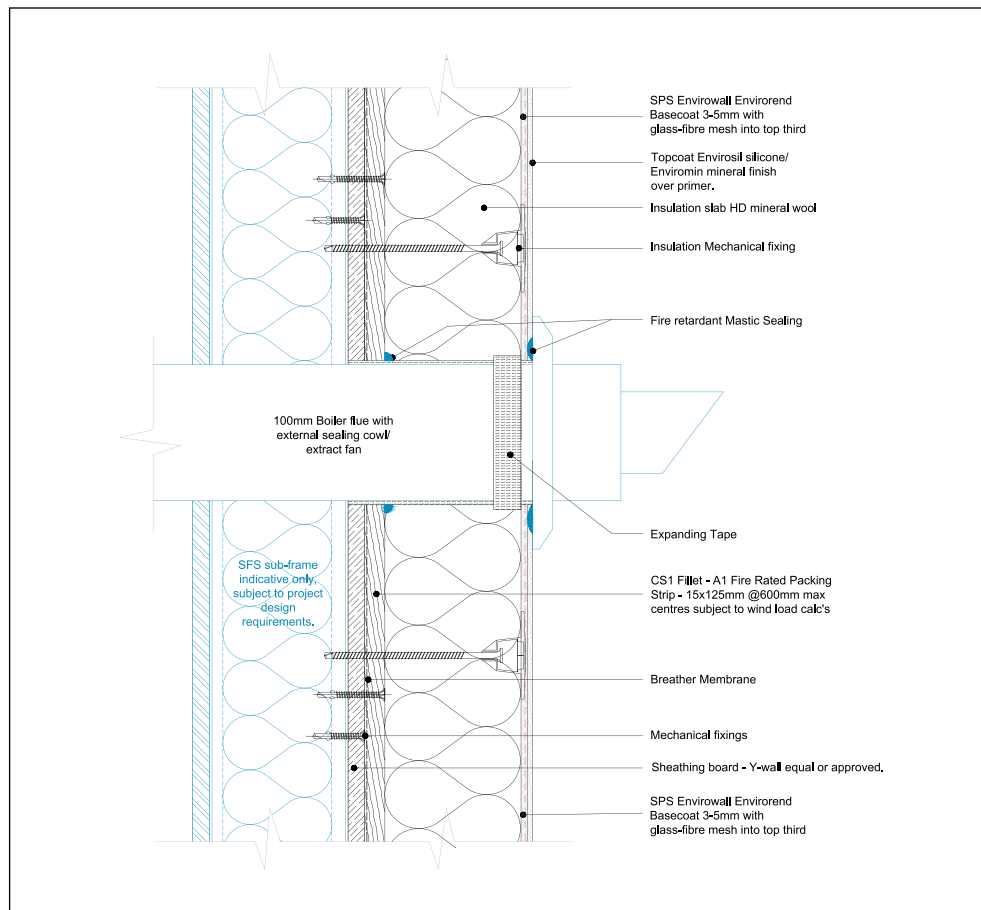
CS1 - Medium weight attachment fixing detail (Opt 2)



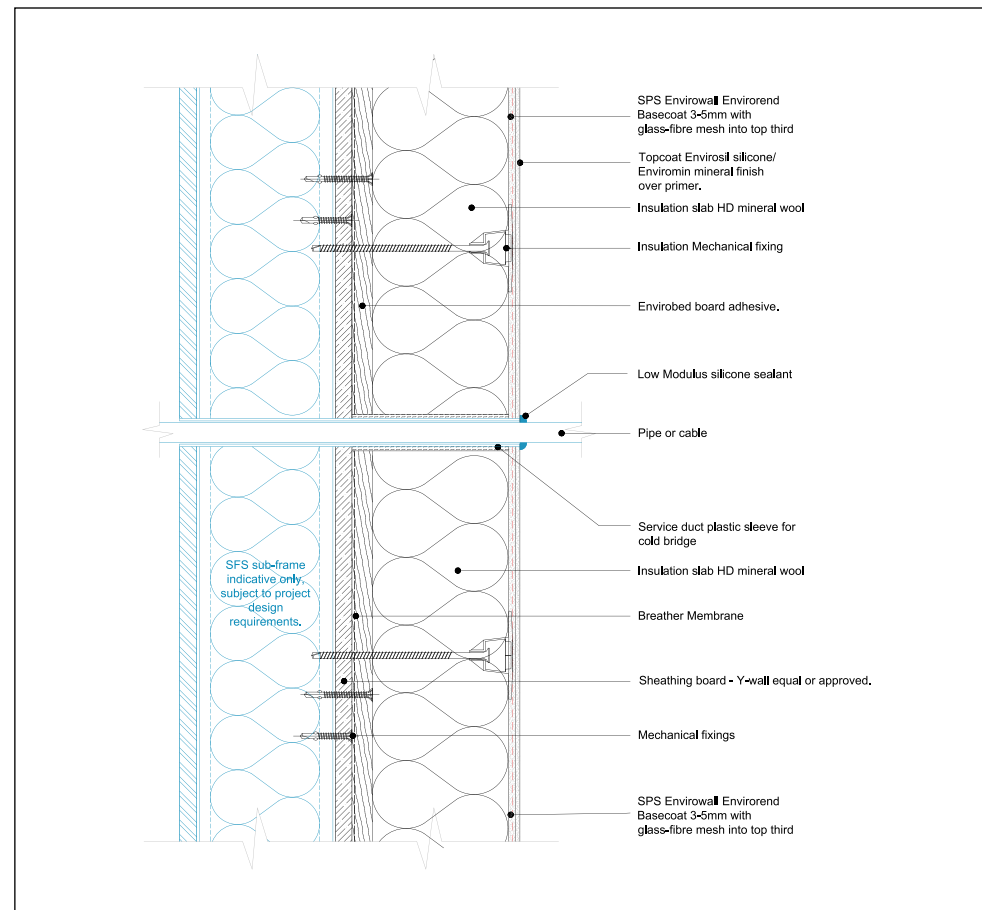
CS1 - Heavy duty Mounting Bracket



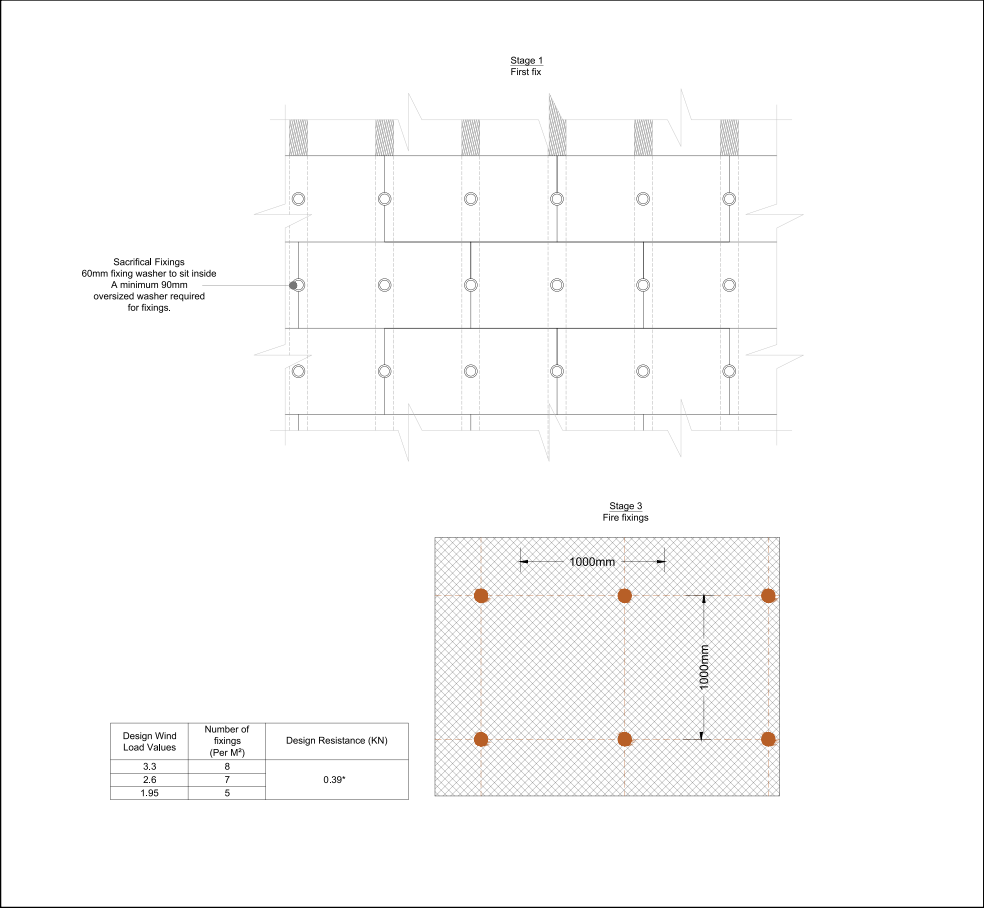
CS1 - Boiler Flue or extract fan details



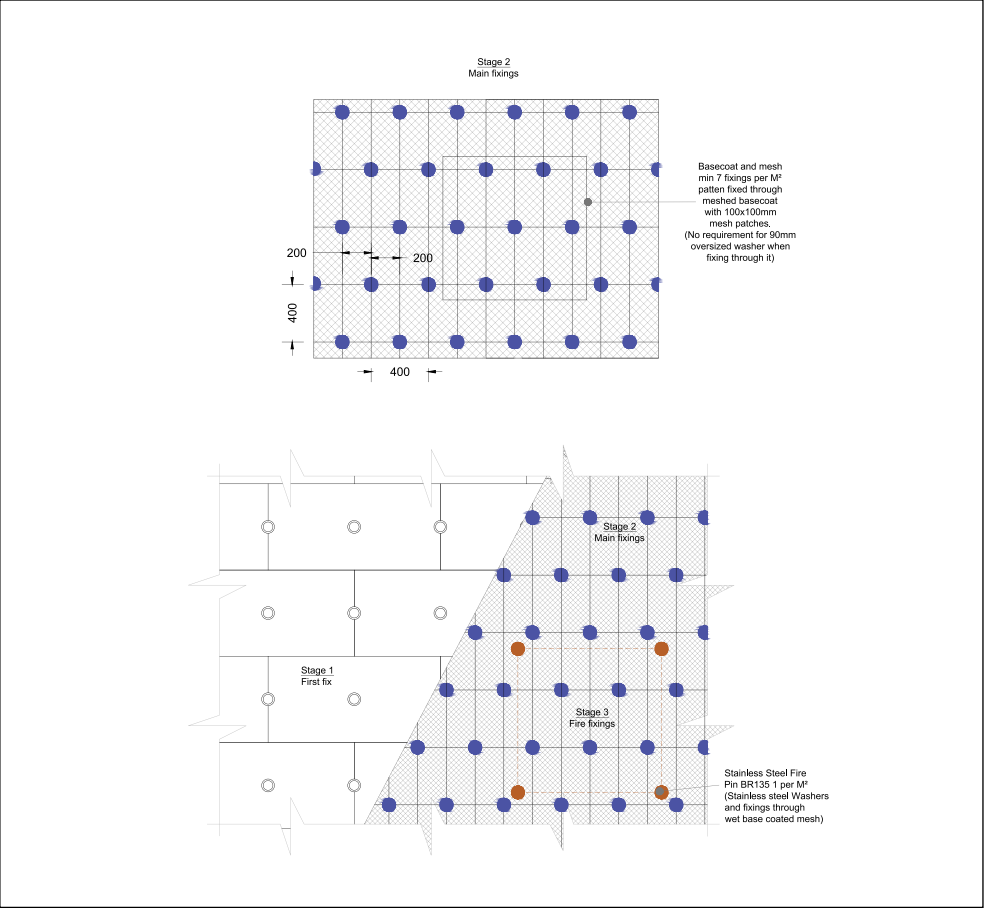
CS1 - Pipe or cable detail



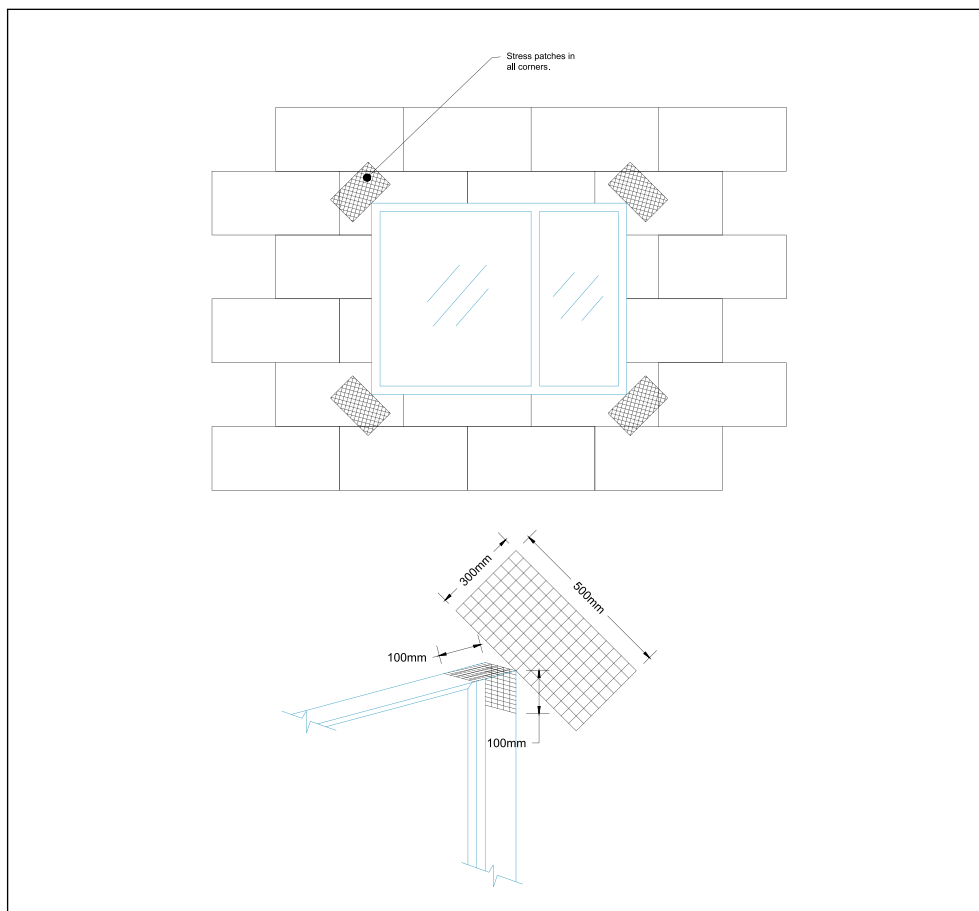
CS1 - Fixing Pattern Through Meshed Basecoat



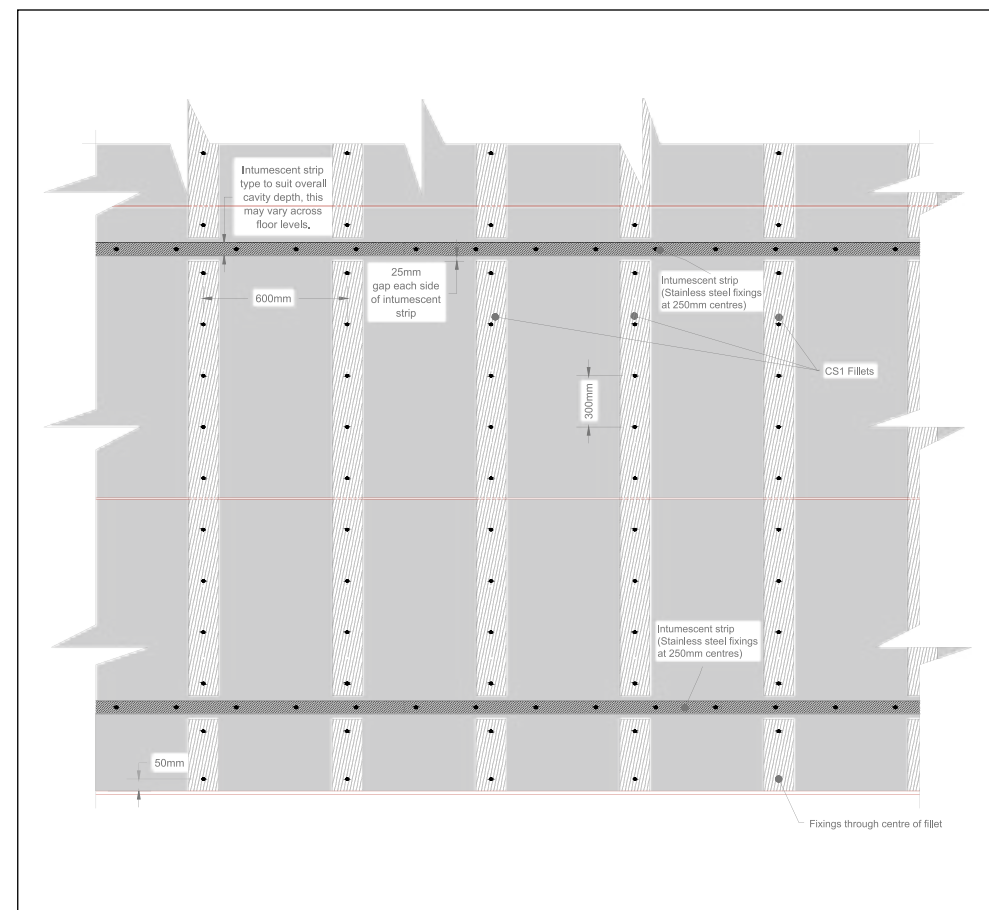
CS1 - Fixing Pattern Through Meshed Basecoat



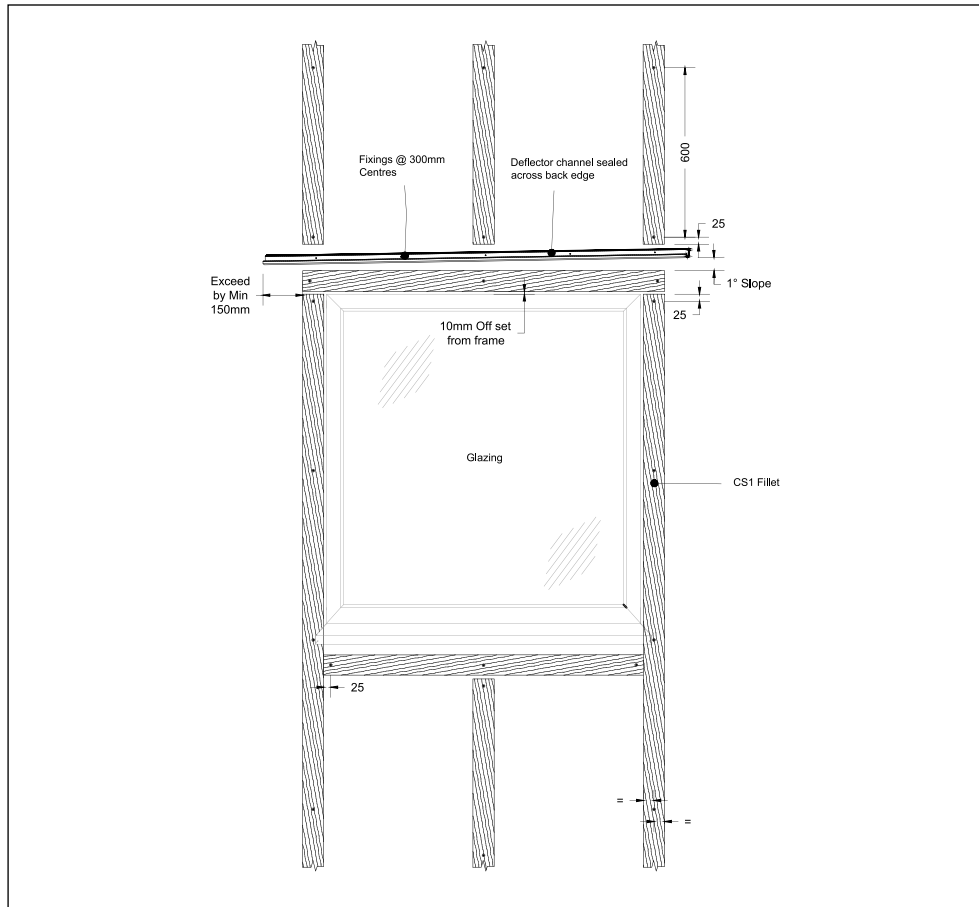
CS1 - Stress patches



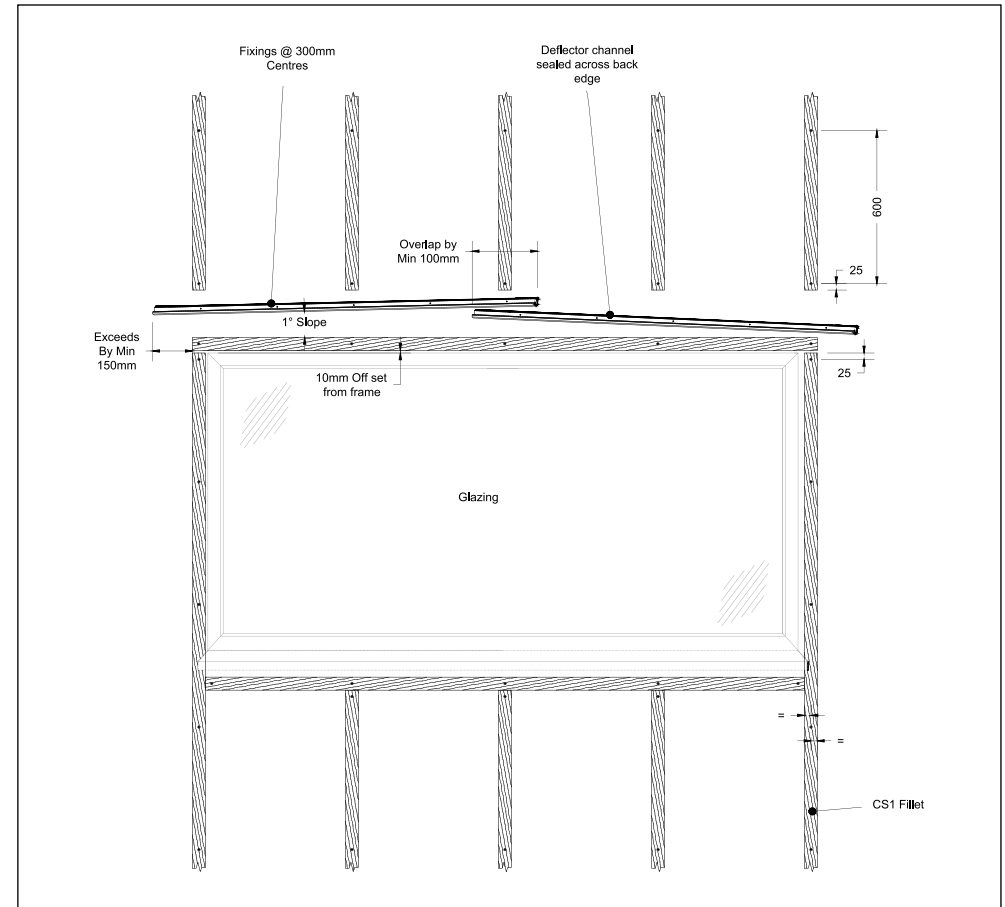
CS1 - Fillet fixing details



CS1 - Fillet fixing detail around small window



CS1 - Fillet fixing details



Information

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Cavity System 1
Product Information



Cavity Systems
Brochure



Cavity System 1
KIWA Certificate for
Flexible Brick



Cavity System 1
KIWA Certificate for
Render



Fire Rated: A1/A2-s1,d0



STRUCTURAL
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