



CORIUM TECHNICAL GUIDE

ROOF / BRICK / PAVER / **FACADE** / BLOCK

Contents

Section 1

Corium System Overview	5
1.1 Applications	7
1.2 Brick tiles	7
1.2.1 Size Options	13
1.2.2 Performance	13
1.2.3 Size Tolerances	14
1.2.4 Colours and Textures	14
1.3 Backing Rails	15
1.3.1 Magnelis	15
1.3.2 Stainless steel	15
1.4 Mortar	15
1.5 Approvals: United Kingdom	16
1.6 Approvals: Europe	16
1.7 Testing	16

Section 2

Design Considerations	17
2.1 Substrate	18
2.2 Subframe	18
2.2.1 Aluminium	18
2.2.2 Timber	18
2.3 Weight	18
2.4 Air and Water Penetration	18
2.5 Ventilation and Moisture Control	18
2.6 Design Wind Load	19
2.7 Impact Performance	19
2.8 Fire	20
2.8.1 Reaction to Fire	20
2.8.2 Cavity Barriers	20
2.9 Thermal Performance	21
2.10 Movement Joints	21

2.11 Soffits	21
2.12 Curves	21
2.13 Below DPC Level	21
Section 3	
Installation	22
3.1 Rails	23
3.1.1 Setting Out	23
3.1.2 Fitting	23
3.1.3 Cutting	23
3.1.4 Corners>Returns	23
3.2 Fixings	23
3.3 Bricks	24
3.3.1 Fitting	24
3.3.2 Bond patterns	25
3.3.3 Blending	25
3.3.4 Cutting	25
3.3.5 Corners	25
3.3.6 Air Bricks	26
3.4 Mortar	26
3.4.1 Joint Profile	26
3.4.2 Pointing	26
3.5 Bimetallic Corrosion	26
3.6 Fixing to the Face of Tiles	27
3.7 Holes/Penetrations	27
3.8 Permissible Deviations	27
Section 4	
Environmental	28
4.1 Environmental Performance Declaration (EPD)	29
Section 5	
General Information	30

5.1 Packaging	31
5.2 Reference Panels	31
5.3 Quality	31
5.4 Wastage	31
5.5 Design Life	32
5.6 Cleaning	32
5.7 Maintenance	32
5.8 Repairing Damaged Areas	32
5.9 Terms of Use	32

Section 6

Typical SFS Construction Details	34
6.1 Typical Wall Build-up (Section)	35
6.2 Ground Floor Slab Detail	36
6.3 Window Cill Detail	37
6.4 Window Head Detail	38
6.5 Parapet Detail	39
6.6 Horizontal Movement Joint Detail	40
6.7 Typical Wall Build-up (Plan)	41
6.8 External Corner Detail	42
6.9 Internal Corner Detail	43
6.10 Window Jamb (Brick Reveal)	44
6.11 Vertical Movement Joint Detail	45

Section 1

Corium Systems Overview

The Corium system comprises interlocking steel backing sections (rails) profiled to allow fired clay brick tiles to be clipped in, providing a mechanical fix. The vertical and horizontal joints between the tiles are pointed with mortar to provide a brickwork finish.

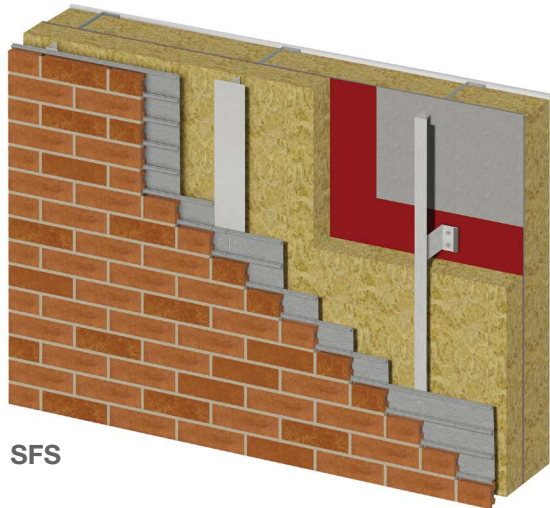


Features and benefits

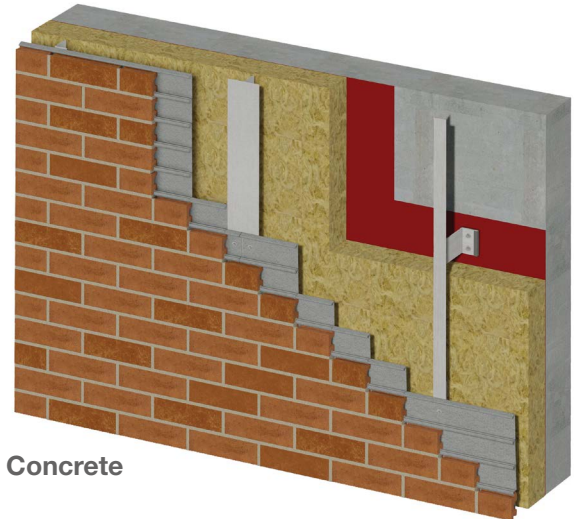
- Fast track construction.
- Lightweight - Corium has a system weight of approximately 68kg/m² (standard brick tiles, steel backing rails and mortar).
- Interlocking steel backing rails.
- Mechanically fixed brick tiles.
- Non-combustible components.
- Extensive range of colours, sizes, textures and finishes.
- Purpose made brick tiles means less raw material usage and less waste.
- Installation less weather dependent than traditional brickwork.
- Can be installed from MEWPs and mast climbers, reducing the need for scaffolding.
- BBA certified.
- Tested to CWCT standards.
- BS 8414 test data available.

1.1 Applications

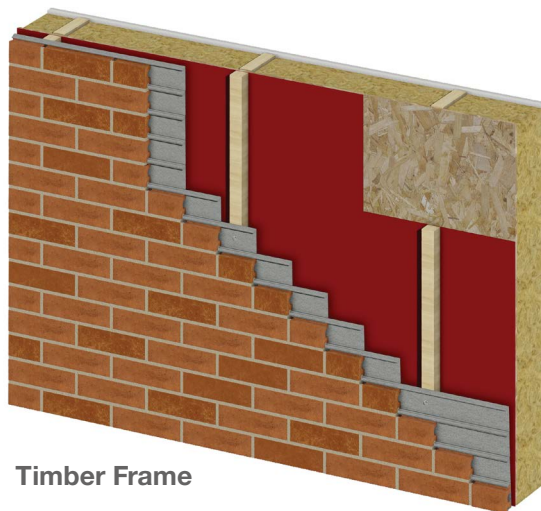
Suitable for use as a rear ventilated and drained rainscreen cladding system over SFS, concrete, timber frame and masonry substrate walls. Corium can also be used with an insulated panel backing structure and for modular, off-site fabricated buildings.



SFS



Concrete



Timber Frame

1.2 Brick Tiles

Corium is a facade system including purpose-made fired clay brick tiles. The products have the characteristics of dense bricks and the shape of thick tiles so for clarity we refer to them as Corium brick tiles. The following brick tiles are available:

- Standard brick tiles.
- Large format brick tiles.
- Projecting bricks tiles.
- Header tiles.
- Corner tiles.
- Soldier tiles.
- Soffit return tiles.
- Air brick tiles.

Corium Standard Tiles Formats

Brick Height (mm)	Brick Length (mm) Maximum length is 327mm	Header (mm)	Soldier (mm)
50	215	102.5	
57.7 US Modular format	194	92	
57.7 US Norman format	295	92	
65 Standard UK brick format	215	102.5	
92 US Utility format	295	92	
140 Spans 2 No. 65mm rails	215		65
215 Large format Spans 3 No. 65mm rails	327		65

Projecting Tiles

Tile Height (mm)	Projection (mm)	Thickness (mm)	Tile Length (mm)	Header (mm)
	0	32		
50	15	47	215	102.5
65	20	52	215	102.5
65	50	82	215	102.5



50 x 47 x 215mm



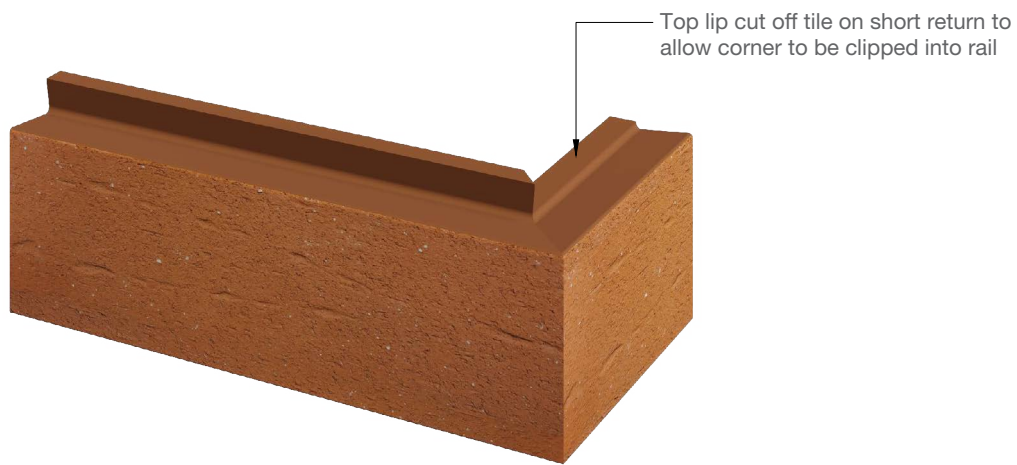
65 x 52 x 215mm



65 x 82 x 215mm

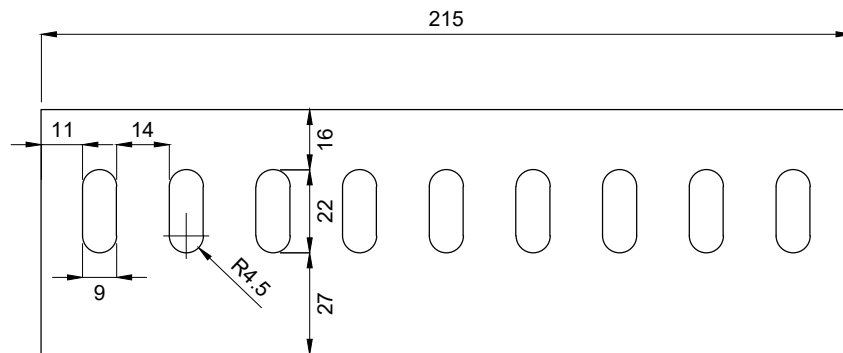
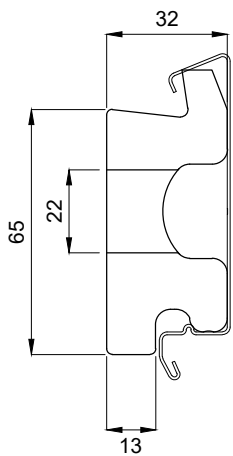
Cut and Bonded Corner Units

Right and left hand units available for 90 degree external corners and angles. available in 215 x 102.5mm size as standard or other dimensions on request. Units are assembled using an A2 rated adhesive.

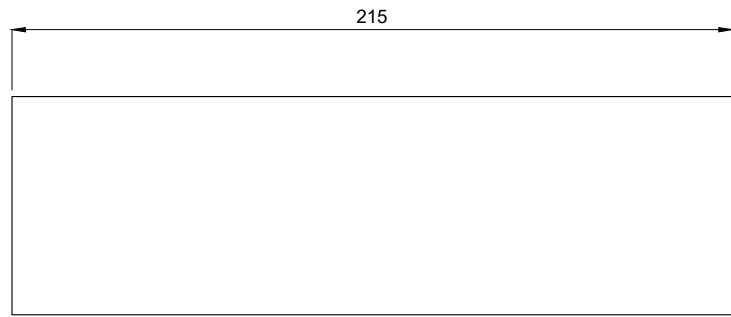
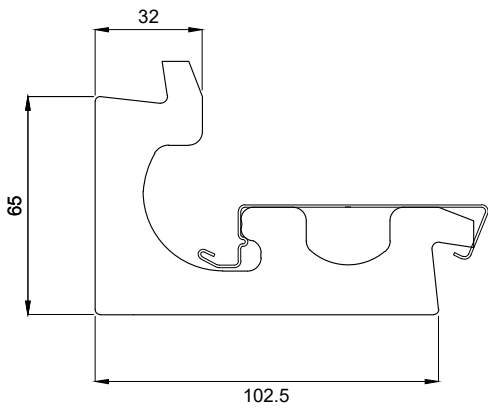


Air Brick Tile

Steel backing sections need to be drilled with the equivalent free air space at the positions of the air bricks. It is recommended that stainless steel rails are used behind air brick tiles. Holes illustrated provide approximately 1625mm² free area. Other free areas available subject to approval.



Soffit Return Tile
65 x 102.5 x 215mm



1.2.1 Size Options

Corium brick tiles are extruded and are available in a range of sizes:

215mm (L)	x	50mm (H)	x	32mm (T)	
215mm (L)	x	65mm (H)	x	32mm (T)	—standard size
215mm (L)	x	140mm (H)	x	32mm (T)	
215mm (L)	x	215mm (H)	x	32mm (T)	
215mm (L)	x	50mm (H)	x	47mm (T)	
215mm (L)	x	65mm (H)	x	52mm (T)	
215mm (L)	x	65mm (H)	x	82mm (T)	
215mm (L)	x	102mm (H)	x	65mm (T)	—soffit return tile

Brick tiles can be extruded in other lengths on request, up to a maximum of 327mm.

Shorter lengths between 65 and 215mm are manufactured by cutting full length brick tiles.

1.2.2 Performance

Because of the unique design and bespoke production there is currently no specific harmonised BS or EN product standard, hence the system's own General Specification outlined below.

Durability

Suitable for severe exposure applications.

May be considered equivalent to F2 designation to BS EN 771-1.

Soluble Salt Content

Soluble salt content is negligible and is not tested.

May be considered equivalent to S2 designation to BS EN 771-1.

Water Absorption

The water absorption of the tiles to EN ISO 10545-3 is $\leq 3\%$.

1.2.3 Size Tolerances

To achieve the size consistency desired for the Corium system, Corium tiles conform to tighter dimensional tolerances than most bricks. Wienerberger has set tolerances for standard and corner tiles as listed below. Tolerances on other shapes and sizes should be agreed before order placement.

Target - 215mm	Min. Mean of 10	213mm
	Max. Mean of 10	217mm
Target - 102mm	Min. Mean of 10	100mm
	Max. Mean of 10	104mm
Target - 65mm	Min. Mean of 10	63mm
	Max. Mean of 10	67mm
Target - 32mm	Min. Mean of 10	30mm
	Max. Mean of 10	34mm

Curvature/Flatness (Deviation of face)

+/- 1.5% of the target length/height of the tile.

Squareness/Rectangularity

+/- 1.5% of the target length/height of the tile.

Bowing (Deviation of face in elevation)

Maximum deviation of mean of 10 samples from a straight edge = 2mm.

Angle (External corner units)

Target angle +/- 2 degrees.

1.2.4 Colours and Textures

Corium has a specific colour range with no direct equivalent to traditional brick. Colours (called engobes) or glazes are applied before drying and firing and are added on a mechanised finishing line equipped with sprays and rollers (for textures or sand). This is carried out before drying and then firing at circa. 1100°C in a large tunnel kiln.

Each Corium tile is manufactured on the same red brick extruded body.

Engobes are liquid colourings consisting mainly of clay minerals. The engobe is applied to the dried unfired tiles. During firing the engobe coating is sintered into the surface of the tile creating special colour effects.

To manufacture glazed tiles a glassy solution is applied to the dried unfired tiles. During the firing process, this applied surface coating fuses with the tile, forming a real glass coating. Unlike engobes, glazes are impervious to water.

The following surface textures can be reproduced:

- Sanded
- Slated
- Smooth
- Dragfaced
- Flaked
- Hand moulded
- Rustic edges
- Softly creased
- Spocks
- Deep creased

1.3 Backing Rails

The steel backing rails are profiled to suit the brickwork coursing height and are supplied in 2.4m lengths. Corium rails are available in 0.7mm thick Magnelis® metallic coated steel (ZM310 and ZM430) or 0.55mm thick stainless steel (grades 304 and 316).

1.3.1 Magnelis

Magnelis® is a flat carbon steel product coated on both sides with a zinc-aluminium-magnesium alloy. This alloy, composed of 93.5% zinc, 3.5% aluminium and 3% magnesium, is applied by means of a continuous hot dip galvanising process.

Corium rails are available in two coating thicknesses:

ZM310 - Coating weight of 310g/m² (25 µm)

ZM430 - Coating weight of 430g/m² (35 µm)

Indicative coating design life

Corrosion category for Zn (ISO 12994-2:2017)	Coating design life (years)	
	Magnelis ZM310	Magnelis ZM430
C2	> 50	> 50
C3	30 to > 50	40 to > 50
C4	15 to 30	20 to 40
C5	8 to 15	10 to 20

1.3.2 Stainless steel

Grade 304

Grade 316 – coastal applications

Grade 316 includes molybdenum which significantly increases resistance to salt corrosion making it more suitable for saline or chloride exposed environments.

1.4 Mortar

Parex Historic Mortar KL by Sika was developed specifically for Corium due to the low porosity and suction of tiles.

Parex Historic Mortar KL is a traditional hydrated lime, sand, GGBS mortar manufactured to BS EN 998-2. Mortar is applied using manual, mechanical or compressed air-based pumps with controlled nozzle applicators.

Pointing and mortar mixing must only be carried out by qualified installers or contractors. Mortar must be stored, handled and used strictly in accordance with the manufacturer's instructions.

1.5 Approvals: United Kingdom

Wienerberger have been issued British Board of Agrément Certificate number 19/5693 for the Corium system.



The receipt of this certificate demonstrates that Corium complies with the requirements of The NHBC Standards, Part 6 Superstructure (excluding roofs), Chapter 6.9 Curtain walling and cladding.

A copy of the full BBA Certificate can be obtained from our website.

1.6 Approvals: Europe

Wienerberger have been issued European Technical Assessment ETA-22/0015

This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, based on EAD 090062-00-0404 – Kits for external wall claddings mechanically fixed.

A copy of the full ETA can be obtained from our website.



1.7 Testing

Corium has been subjected to a range of accredited tests to determine air leakage, watertightness, impact resistance and structural serviceability under both static and dynamic conditions. The system has been extensively tested in accordance with the CWCT 'Standard for Systemised Building Envelopes' in a range of configurations and with different support systems. In addition, wind load and impact testing has been carried out in accordance with EAD 090062-00-0404.

Corium has also been assessed for hygrothermal behaviour (ETAG 034), freeze/thaw resistance (ETAG017), water vapour permeability (BS EN 12572) watertightness of joints (protection against driving rain (EN 12865)) and pull-through resistance of fixings. Test reports are available on request.

Section 2

Design Considerations

2.1 Substrate

The Corium system transfers its self-weight and design wind loads through the supporting sub-frame to the substrate wall. The substrate wall and supporting subframe must be capable of supporting the associated loads.

2.2 Subframe

The steel backing rails can be mounted horizontally or vertically and are mechanically fixed to the supporting sub-frame.

2.2.1 Aluminium

Corium is typically fixed to an aluminium sub-frame consisting of extruded aluminium L and T shaped vertical profiles secured to the backing wall with aluminium helping hand support brackets. The face to which the system is fixed should be aligned flat and vertical and should be to a specialist manufacturers static calculations and design.

All supports are required at a maximum of 600mm centres either vertical or horizontal.

2.2.2 Timber

Timber-frame walls must be designed and constructed in accordance with PD 6693-1 : 2012 and BS EN 1995-1-1 : 2004 and its UK National Annex, and preservative-treated in accordance with BS EN 351-1 : 2007. Size and spacing of battens and the fixings need to be specified by the design engineer and are project specific based on wind loads, building height etc.

A timber support frame should only be considered if all the statutory regulations and requirements are met.

2.3 Weight

Corium has a system weight of approximately 68kg/m². This includes the standard brick tiles, steel backing rails and mortar.

Tile thickness range from 32mm to 82mm. The weights for the standard and projecting tiles (tolerance +/- 3%) are as follows:

32mm = 0.830 kg per brick (standard tile)

52mm = 1.470 kg per brick

82mm = 2.465 kg per brick

Individual dry tile weights can vary and are for guidance only.

2.4 Air and Water Penetration

Corium is not an air or watertight rainscreen system, but it will minimise water penetration and the risk of damage to the inner backing wall. The substrate wall to which the system is fixed should be both air and watertight.

2.5 Ventilation and Moisture Control

To provide adequate ventilation (and to satisfy NHBC Chapter 6.9 requirements) a minimum 15mm continuous cavity between the back of the Corium rails and the face of the insulation and/or backing wall is required. The cavity zone should be continuous and unobstructed apart from any vertical cavity fire barriers that are installed to comply with

building and statutory regulations. All horizontal cavity fire barriers should allow for adequate ventilation and drainage of the rainscreen system.

Ventilation gaps are required at the top and the bottom of the facade and above and below every facade aperture to ensure sufficient air circulation.

All ventilation air gaps greater than 10mm should be fitted with a suitable perforated vent profile to prevent the ingress of insects and vermin.

2.6 Design Wind Load

Corium can be used where the maximum design wind load does not exceed **±2.4 kN for serviceability & ±3.6 kN for safety**.

Please refer to the certification and test reports listed in sections 1.5, 1.6 and 1.7 of this document.

2.7 Impact Performance

The system has achieved Class 2 for serviceability impacting in accordance with CWCT TN76.

The system has achieved ‘Negligible Risk’ for safety impacting in accordance with CWCT TN76.

Please refer to the certification and test reports listed in sections 1.5, 1.6 and 1.7 of this document.

CWCT classification for serviceability performance	Definition	Explanation/Examples
1	No Damage	Nil damage visible from 1m, and any damage visible from closer than 1m unlikely to lead to significant deterioration.
2	Surface damage of an aesthetic nature which is unlikely to require remedial action	Dents or distortion of panels not visible from more than 5m (note visibility of damage will depend on surface finish and lighting conditions. Damage will generally be more visible on reflective surfaces), and any damage visible from closer than 5m unlikely to lead to significant deterioration.
3	Damage that may require action or replacement of components to maintain appearance or long term performance but does not require immediate action	Dents or distortion of panels visible from 5m, or spalling of edges of panels of brittle materials, or damage to surface finishes that could lead to deterioration of the substrate.
4	Damage requiring immediate action to maintain appearance or performance. Remedial action may include replacement of panel but does not require dismantling or replacement of supporting structure	Significant cracks in brittle materials e.g. cracks that may lead to parts of tie falling away subsequent to test or fracture of panels causing significant amounts of material to fall away during test.
5	Damage requiring more extensive replacement than 4	Buckling of support rails.

CWCT classification for safety performance	Definition
Negligible risk	No material dislodged during test and No damage likely to lead to materials falling subsequent to test and No sharp edges produced that would be likely to cause severe injury to a person during impact, and Cladding not penetrated by impactor.
Low risk	Maximum mass of falling particle 50g, and Maximum mass of particle that may fall subsequent to impact 50g, and Cladding not penetrated by impact and No sharp edges produced that would likely to cause severe injury during impact.
Moderate risk	Maximum mass of falling particle less than 500g, and Maximum mass of particle that may fall subsequent to impact less than 500g, and Cladding not penetrated by impact and No sharp edges produced that would be likely to cause severe injury during impact.
High risk	Maximum mass of falling particle greater than 500g, or Cladding penetrated by impact, or Sharp edges produced that would be likely to cause severe injury during impact.

2.8 Fire

2.8.1 Reaction to Fire

Corium brick tiles are a fired clay product and are classified as A1 in accordance with BS EN 13501-1. To confirm this classification, testing has been carried out at the BRE and the test report is available on request.

Corner units supplied by Wienerberger for 90 degree external corners and angles are cut and bonded using an A2 rated adhesive. Pre-cut corner sets can also be supplied for on-site bonding and require a suitable A2 rated adhesive to ensure compliance.

Magnelis metallic coated steel and stainless steel are automatically classified as A1 in accordance with European Commission Decision 96/603/EC which provides a list of construction products that are considered to be class A1 without testing

2.8.2 Cavity Fire Barriers

Both horizontal and vertical cavity fire barriers should be installed in the rainscreen cavity zone to comply with building and statutory regulations.

The cavity fire barriers must be designed and tested for use in a rainscreen system and be fully passive and non-combustible.

The number and location of the cavity fire barriers is determined by the respective design teams and their fire consultants on an individual project basis.

2.9 Thermal performance

Corium doesn't offer any thermal performance benefits because the system is installed on the cold side of a ventilated cavity. The thermal resistance of Corium would have a negligible effect in a U-value calculation.

Please note that Wienerberger always recommend the use of non-combustible mineral wool insulation in all rainscreen cavity zones, irrespective of the application, building use and height.

2.10 Movement Joints

Vertical movement joints to allow for horizontal movement should be provided through tile, mortar and steel sections at 10 to 12m centres in the brick cladding. They should extend throughout the full height of the building including parapets etc. Movement joints in the structure of the building should be carried through to the face of the cladding.

Horizontal joints to allow for vertical movement should be provided at maximum 9m centres generally and more frequently in timber framed structures. reference to the structural engineer's details for deflection at the floor level and movement joints in the substructure should be made.

Provision for movement is the responsibility of the project designer/engineer and must be confirmed by the installer before proceeding with installation.

The supporting aluminium substructure should always be designed to accommodate as applicable both horizontal and vertical movement joints.

Joints should be filled with a closed cell polyethylene foam joint filler to provide a backing for the sealant.

Arbosil LMS used with Arbo Primer 2650 has been proven to work effectively with Corium brick tiles.

2.11 Soffits

In a soffit situation the engineer should specify the sub-structure and number of fixings required based on the dead weight of the system and any other requirements e.g. wind loads etc.

2.12 Curves

Please refer to the Wienerberger Technical department for guidance on achieving curved Corium facades.

2.13 Below DPC Level

The system may be used below the DPC level and at sub-basement level below the ground. We recommend that in this situation stainless steel backing rails are always used. The Corium system is non-loadbearing, so the sub-ground structural wall needs to be able to support the Corium system, the sub-frame, and any imposed loads from the surrounding terrain. We would always recommend that the project structural engineer be consulted on this type of application.

Section 3

Installation

Corium should only be fitted by installers who are experienced with this type of system and method of construction.

3.1 Rails

3.1.1 Setting Out

The sections are supplied in 2.4m lengths. Lengths are butt jointed over supports and joints should be staggered between adjacent sections unless the area is less than 2.4m wide in which case the sections need not be staggered.

3.1.2 Fitting

Ensure all backing sections are clipped together using the interlock action of the formed sections. Always work from the top to the bottom.

Level and fix the top section at two points, whilst allowing those below to hang freely. The intermediate section(s) are then re-positioned horizontally to form staggered joints as required, and the bottom section is then aligned vertically with the measuring tool supplied and secured. The tool sets out the sections to a multiplication factor of 75mm, (i.e. 5 x 75mm = 375mm). Finally, adjust the intermediate section(s) horizontally, if required, and fix as required.

When installing soldier tiles or large format tiles it is recommended that the top steel profile of the three that carry the soldier is secured. The middle and lower rails should be left hanging. A number of soldier tiles should be installed into the top profile and over the loose ones. The loose profiles can then be adjusted to suit the exact dimensions of the soldier tiles or large format tiles and fixed accordingly.

3.1.3 Cutting

A chop saw fitted with the correct type of blade can be used to produce accurate cuts of acceptable quality e.g. DeWalt DW872 110V. Lengths of steel can also be cut to size using a jigsaw set to a suitably slow speed, or a hacksaw. Do not use methods which may generate high temperatures such as abrasive disc cutters, as this can damage the Magnelis coating. A sheet nibbler should not be used as this would cause the dutch fold to fill and prevent interlock.

All steel backing sections must be cleaned carefully to remove all traces of cutting swarf etc. immediately after cutting and must be checked for cleanliness before tile installation.

3.1.4 Corners>Returns

Steel backing sections are butt-jointed at corners over the corner support angle. The use of a laser level is recommended to align the backing sections around corners.

3.2 Fixings

It is the installers responsibility to ensure that the primary anchors/fixings are appropriate to the overall design requirements and suitable for the attaching the sub-structure wall brackets to the supporting backing structure. The installer should seek approval for the fixings from the project engineer.

Austenitic stainless steel fasteners with integral sealing washer (EPDM or similar) should be specified to suit the support material to which the Corium backing rails are being fixed. Fixings should be minimum of 5.5 x 25 mm (diameter x length) with an 8 mm hexagonal head. A typical fixing for the Corium rail onto aluminium supports is the EJOT JT3 3 5.5 x 25 S16.

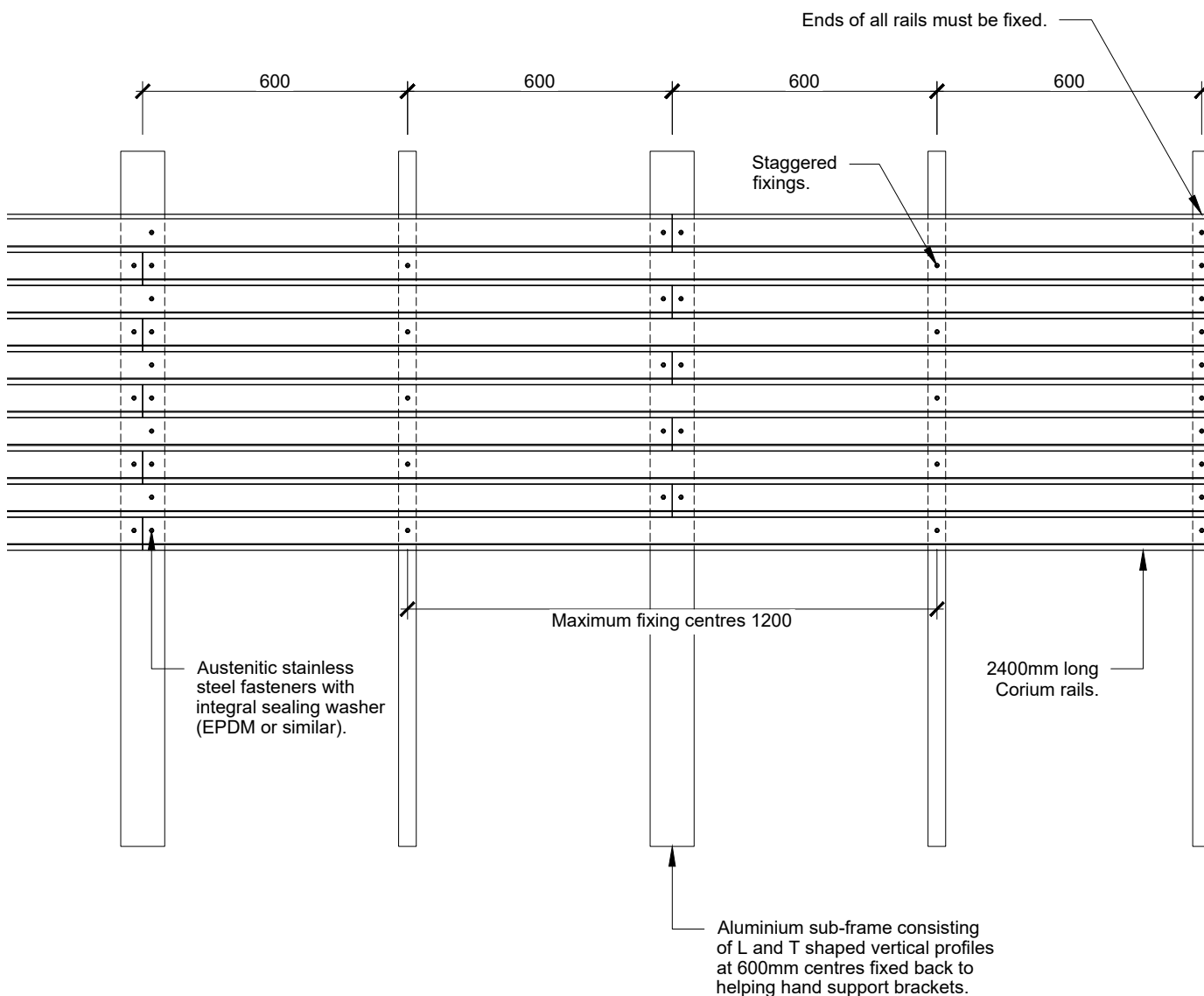
All fasteners are to have minimum mechanical performance figures of:

Fastener ultimate shear strength	6.5 kN
Fastener ultimate tensile strength	9.0 kN
Fastener ultimate pull-out strength	2.0 kN
Fastener ultimate pullover strength	3.6 kN

The Corium brick tile will not interfere with the head of the fastener (provided the maximum head size is not exceeded) as it has a continuous horizontal recess in its back face. Fasteners should be positioned along the line of the horizontal central dots punched into the surface of all steel backing sections.

Fasteners are required at the ends of all steel sections and maximum 1200mm centres along their length.

Fasteners should be staggered between adjacent vertical steel sections as shown in drawing CM-FX-01 (18 no. fasteners per m²).



3.3 Brick Tiles

3.3.1 Fitting

Prior to installation of the tiles the backing sections should be cleaned to remove any cutting waste, dirt, rainwater etc.

Tiles are inserted into the backing section with the top of the tile first. Applying a slight cushioned blow to the bottom of the tile with a white rubber mallet forces the tile into its desired location. Always ensure that the tile is fitted fully over the raised 'pip' on the section. To reposition the tile, simply lever out using a bolster chisel (or similar wide blade tool) under the bottom edge and replace in the correct position. Care must be taken to minimise abrasion to the sections.

The positions should be set out from the corners inwards on each elevation adjusting the vertical joint width to suit variations in tile lengths – minimum joint width 8mm, maximum 14mm.



3.3.2 Bond Patterns

The continuous backing rails mean that any traditional or contemporary brick bond pattern can be easily achieved. Brick lengths less than 215mm (e.g. headers) are cut to size from standard tiles.

3.3.3 Blending

Like standard clay bricks, Corium bricks vary in size, shape, colour and texture - this is inherent in their production and normally part of their appeal to specifiers. Bricks should be blended from a minimum of 3 packs.

Factory blending is available on request where a mix of colours is being specified.

3.3.4 Cutting

Wet cutting is recommended with a diamond-tipped saw blade and suitable dust suppression. Brick tiles can be supplied pre-cut to the required length on request.

3.3.5 Corners

A cut and bonded external corner unit is clipped in place in the normal manner, with the shorter leg of the corner unit left overhanging the brick immediately below. Once the brick tile is inserted it is positioned by applying a slight cushioned impact directly on the corner of the tile.

Pre-cut corner sets can also be supplied for on-site bonding. The installer should apply a suitable A2 rated adhesive to the mitre cut face of both brick tiles in the set. The two pieces should be clipped into the steel rails as normal and then brought together in situ. Any excess material should be removed using a palette knife or similar implement. A colourant such as Sealotone may be added to provide a colour match to the brick.

For internal corners, cut tiles minimum 112mm to maximum 125mm long are positioned adjacent to a full tile as per drawing CM-SF-14 & 15. This is then alternated on each course to achieve the effect of a traditionally constructed internal corner.

A suitable A2 rated adhesive should be used for all cut and bonded corners and site bonded corners.

3.3.6 Air Bricks

Holes are water jet cut through standard brick tiles. Steel backing sections also need to be drilled with the equivalent free air space at the positions of the air bricks. It is recommended that stainless steel rails are used behind air brick tiles.

Standard 215 x 65mm air bricks provide 1625mm² unobstructed air space, but other designs/hole patterns are available on request.

3.4 Mortar

3.4.1 Joint Profile

Flush or slightly bucket-handled profiles are acceptable.

3.4.2 Pointing

To ensure good quality pointing of the Corium system, the mortar manufacturer's guidelines and advice should be adhered to. Sika are more than willing to help with training and guidance in the use of their materials.

Pointing of any masonry is subject to temperature and should be protected accordingly. This is the contractor's responsibility. At temperatures of 3°C and falling, all pointing should cease. All areas that have already been pointed should be protected in these climates.

At low temperatures the mortar will cease curing resulting in the mortar becoming friable. Equally, when temperatures are 30°C or above, fresh pointing should be protected to avoid excessively rapid evaporation of moisture in the mortar.

BS EN 1996-2:2006 and BS 8000-3:2001, refer to the use of masonry on a building site, they advise that new brickwork and mortar should be adequately protected from inclement weather.

In bad weather:

- Dry off any water lying on the Corium steel rails prior to pointing.
- Delay pointing if the tiles are saturated.
- Use localised protection to prevent saturation occurring.

Mortar cleaning should be carried according to manufacturer's recommendations, in small discrete areas.

If a smooth faced brick tile is to be used on a project, the installer should be aware that curing times could be longer than with a heavily textured tile, and that a cleaning regime may be required if the joints are tooled too quickly. The 'cutting off' of excess mortar prior to tooling is recommended when smooth faced tiles are being used.

Diagonal brush cleaning of the Corium brickwork is recommended. This should be done at the end of the day once the mortar has cured.

3.5 Bimetallic Corrosion

Magnelis Corium rails can be fixed directly to aluminium without the need for isolation tape. An assessment of the galvanic coupling of Magnelis with aluminium is available on request.

Stainless steel fixings require an integral sealing washer (EPDM or similar) under the head.

3.6 Fixing to the Face of Brick Tiles

It is possible to drill and fix into Corium tiles but they are very hard. Holes less than 12mm diameter should be cut with a masonry bit and rotary action drill. Dronco Abrasives supply the 'Dronco CeraDrill' which has been proven to drill through Corium tiles.

It is recommended that the hole is centred on the horizontal centre line of the tile. The thickness of the tile along the centreline is 15mm. Fixings need to be positioned so as not to interfere with the Corium rail fixings.

Fixings would normally need to be tested and the supplier (e.g. Fischer, EJOT) should be able to advise. The pull-out strength of the brick tiles before cracking of the mortar occurs is approximately 0.5kN or 50kg and care must be taken not to exceed this. In cases where more strength is required, a fastener should be used which penetrates the steel backing and fixes into the sub-frame. Seal around the penetration with a suitable sealant.

3.7 Holes/Penetrations

Holes larger than 12mm should be formed by first removing the tiles (if already fitted) in the area of the hole and cutting through the steel with a conventional hole saw. It is recommended that a 20mm deep piece of plywood or timber is screw-fixed to the face of the steel to facilitate centring of the drill. Tiles should then be pieced around the penetration after sealing with suitable non-combustible sealant.

Holes less than 12mm should be cut with a ceramic tile or masonry bit. It is recommended that the hole be centred on a horizontal centre line of the tile. After penetrating the tile, the steel backing section can be cut with a conventional HSS drill. Seal around the penetration with suitable non-combustible sealant.

Care should be taken to ensure the building structure or services within the structure are not damaged when drilling such holes.

3.8 Permissible Deviations

Please refer to the following documents regarding permissible deviations in brickwork:

BS 8000-3:2020 Workmanship on construction sites, Part 3: Masonry - Code of practice.

NHBC Standards 2021, 9.1 A consistent approach to finishes, 9.1.2 External walls – Fairfaced masonry.

Section 4

Environmental

4.1 Environmental Performance Declaration

At present there isn't a product specific EPD available for Corium.

An EPD is available for facing bricks, clay pavers and brick slips manufactured in Germany.

An EPD for Magnelis metallic coated steel is available from Arcelor Mittal. Magnelis is 100% recyclable and does not contain any harmful elements.

Section 5

General Information

5.1 Packaging

Standard tiles are delivered to site on timber pallets with polythene shrink wrapping, containing 960 units and weighing approximately 800 kg. The pallets of tiles must be stored on a flat surface and in dry conditions.

The steel backing sections are delivered to site in 2.4m lengths, banded in packs. Each pack contains 90 rails (approximately 16.2 m) and weighs approximately 156 kg (Magnelis) or 135 kg (stainless steel). Packs must be stored dry and supported on timber battens on level ground.

5.2 Reference Panels

Wienerberger recommend that reference panels are built and approved so that they can be referred to if any quality issues are raised once the installation on the building commences. The reference panel should contain brick tiles supplied by Wienerberger for this purpose and be offered to the specifier/contractor for approval before the bulk order is delivered.

The reference panel should be of a reasonable size (minimum 60 No. bricks), and include all of the details, specials, soffits and reveals, to be constructed on the project. The sample should show the mortar colour and finish, joint profiles, and corners. The panel should be representative of the standard to be applied to the project and always be viewed from a 3.0 metre distance.

The decision to approve this panel is crucial, especially for projects where the design team have only seen small scale indicative samples up to this point. It should be expected that there may be differences between the indicative sample/s and these reference samples.

Before full-scale installation commences, a post-order/as delivered panel should also be built including a representative number (minimum 60 No. bricks) of as-delivered bulk production bricks, selected at random from at least 3 packs. Preferably this should be built adjacent to the reference panel to allow comparison under the same light conditions and viewing distance. Installation normally commences when the as delivered panel is approved.

Although the reference samples are normally representative of bulk production, some variation must be anticipated, especially if there is a time delay between approval of the reference panel and the bulk production.

If the pointing is to be carried out by a specialist company, they should also point the mortar joints on the reference/sample panels. The standard achieved should be approved by the design team prior to proceeding with the Corium installation.

Written approval of the panels should be gained from all parties.

5.3 Quality

A three-stage quality check should be carried out as work proceeds. Firstly, the fitting of the steel section should be checked to ensure adequate fixing, alignment of corners and spacing of sections using the approved gauging tool.

The second check is made when tiles are fitted but before pointing to ensure verticality of perpend joints, acceptable colour blend, joint widths, chipped edges, etc. Approval of an appropriate site supervisor should be sought at this stage.

The final check is made after the pointing has been carried out to ensure correct mortar colour and joint profile have been used and that the overall appearance is acceptable in relation to the site reference panel. A viewing distance of 3.0 metres is recommended.

5.4 Wastage

Whilst factory quality control will aim to eliminate brick blemishes as far as practicable and packaging is designed to minimise chipping/edge damage, it is normal to allow a reasonable wastage level, with up to 5% considered acceptable.

5.5 Design Life

The design life of the Corium system, as described in the BBA certificate, is in excess of 35 years in normal UK conditions, providing that all the design and installation is carried out in accordance with the installation guides, British and European Standards, Codes of Practice, Building Regulations and ancillary component manufacturers' guidance

5.6 Cleaning

Corium should be handed over to the main contractor in a clean and tidy condition, having been quality checked and approved before and after pointing.

Stains arising from spillages, contaminations etc. may be cleaned in accordance with normal practice for equivalent brickwork. For guidance refer to the BDA guidance document on the Cleaning of Clay Brickwork.

It is essential to pre-wet any areas to be cleaned with clean water to prevent absorption of the cleaning agent into the Corium bricks and mortar. Pre-wetting limits the cleaning action to the surface where it is required.

Any cleaning method should be tested on small inconspicuous area before widespread usage and should be undertaken by appropriately trained and supervised personnel in accordance with manufacturers' instructions.

5.7 Maintenance

Regular inspections must be made of the condition of the cladding for ensuring the integrity and adequacy of the weather resistance. Guidance on the frequency of inspections can be obtained by reference to BS 8200. Within the material warranty for Corium, inspections are required to be carried out at intervals no less frequently than every 5 years.

5.8 Repairing Damaged Areas

The nature of the damage needs to be assessed by a competent person. Minor damage may only require mortar and tile removal and replacement in a limited area only. More serious damage may involve tile and mortar removal, together with backing rail replacement. This will require removal of Corium up to and including the standard fixing centres of 600mm, re-setting the structural frame (if provided) and re-fixing as for a new build application.

5.9 Terms of Use

The designs and/or information in respect of the Corium brick tile cladding system (the "Corium Information") are provided to you for general information purposes only and to demonstrate an example use of Corium.

The Corium Information is subject to change without notice and whilst it has been prepared with reasonable precaution and in good faith, no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted, by Wienerberger in relation to the adequacy, accuracy, reasonableness or completeness of the Corium Information or the use (or incorrect use) of the Corium Information. All and any such responsibility and liability (whether in contract, tort (including negligence), misrepresentation, under any statute or otherwise) is expressly excluded.

Use of and reliance on the Corium Information is at your own risk. Wienerberger is not responsible for any reliance or actions taken based on the Corium Information.

Nothing contained in the Corium Information should be relied upon as a guarantee of the performance of or otherwise the viability of the Corium brick tile cladding system. Wienerberger is not responsible for any designs or projects which incorporate the Corium Information or the Corium brick tile cladding system, which should be carried out by an appropriately qualified and professional architect or structural engineer. All design and installation in

respect of the Corium brick tile cladding system should be carried out in accordance with applicable law, British and European Standards, Codes of Practice, Building Regulations and ancillary component manufacturers' guidance. All warranties, conditions and other terms implied by law, including the implied conditions of satisfactory quality and fitness for purpose in relation to the Corium brick tile cladding system, are excluded.

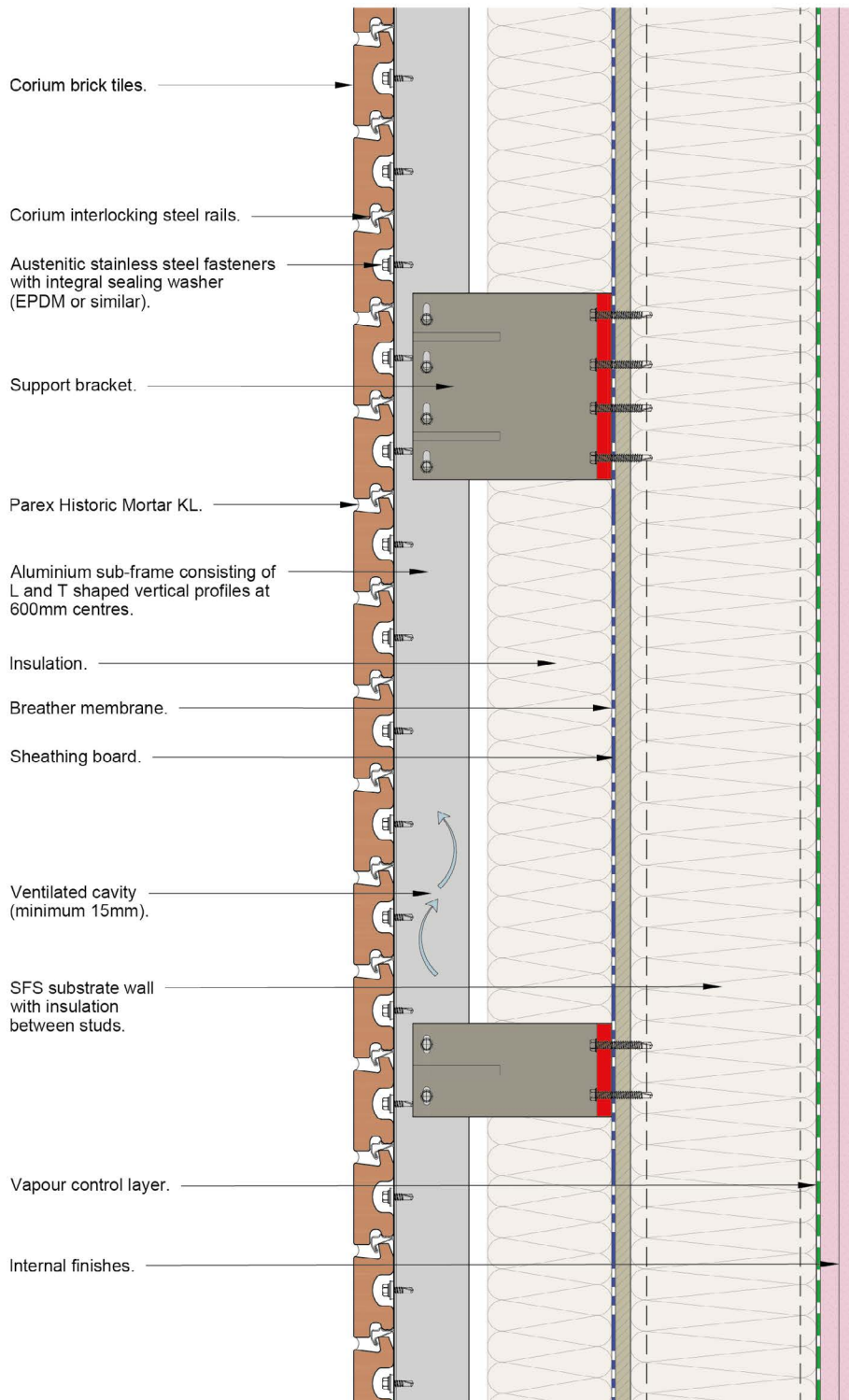
Nothing in the Corium Information is intended to constitute an offer or invitation. The provision of the Corium Information to you is subject to contract and shall in no way create any contractual relationship with Wienerberger.

Wienerberger owes no duty of care and excludes all liability in respect of the Corium Information, provided that nothing in this disclaimer shall exclude or limit Wienerberger's liability for death or personal injury caused by its negligence, fraud or fraudulent misrepresentation.

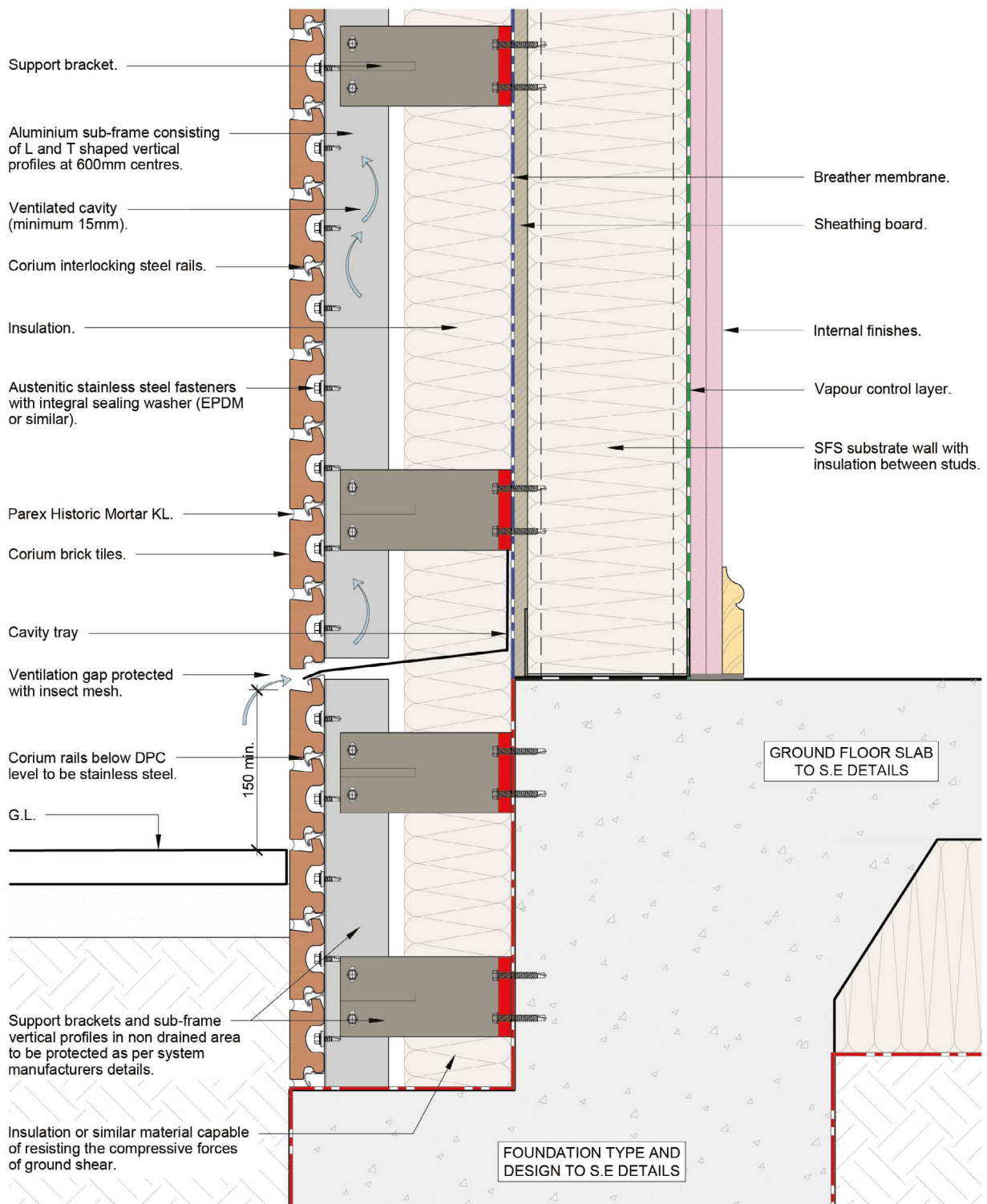
Section 6

Typical SFS Construction Details

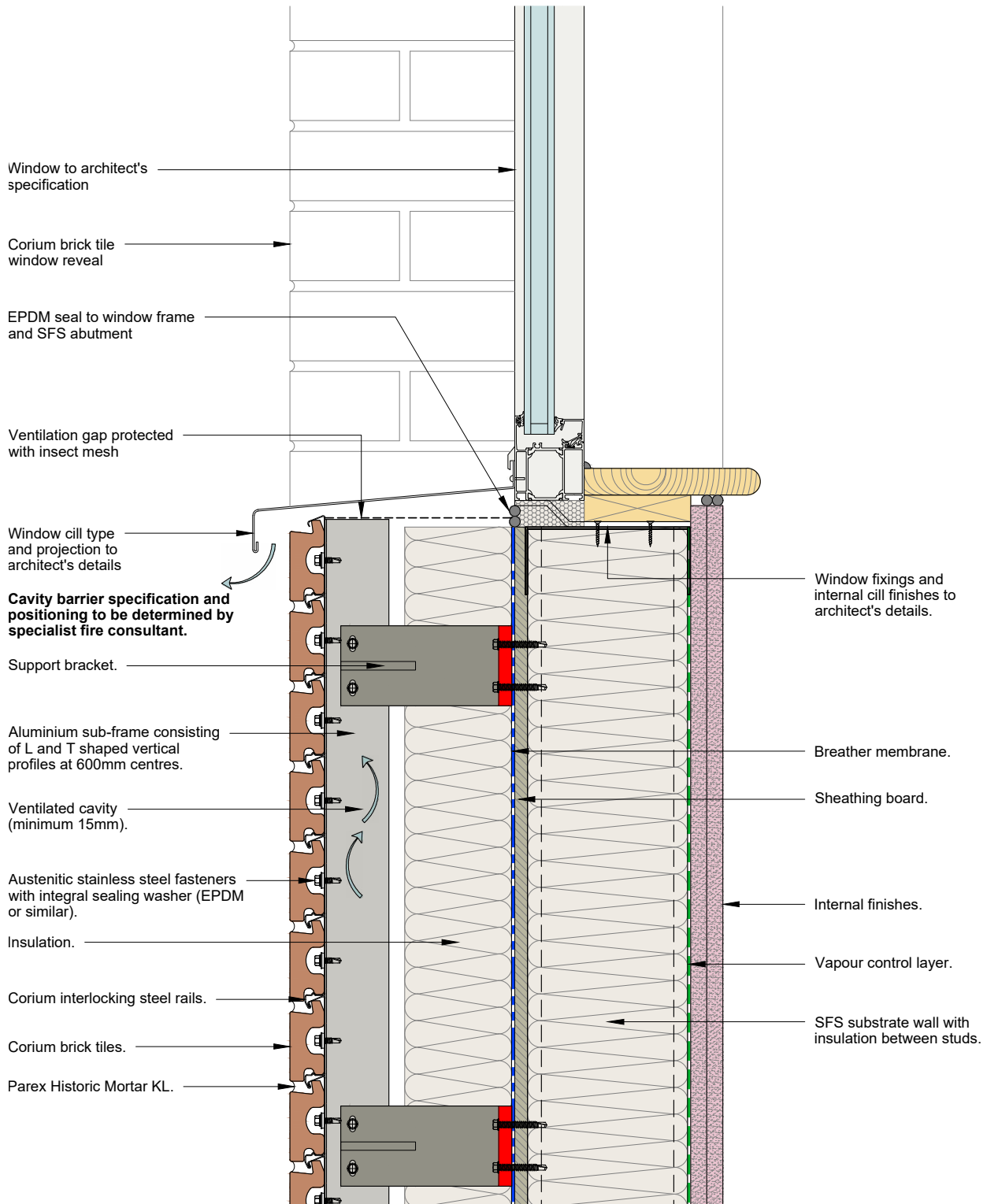
6.1 Typical Wall Build-up (Section)



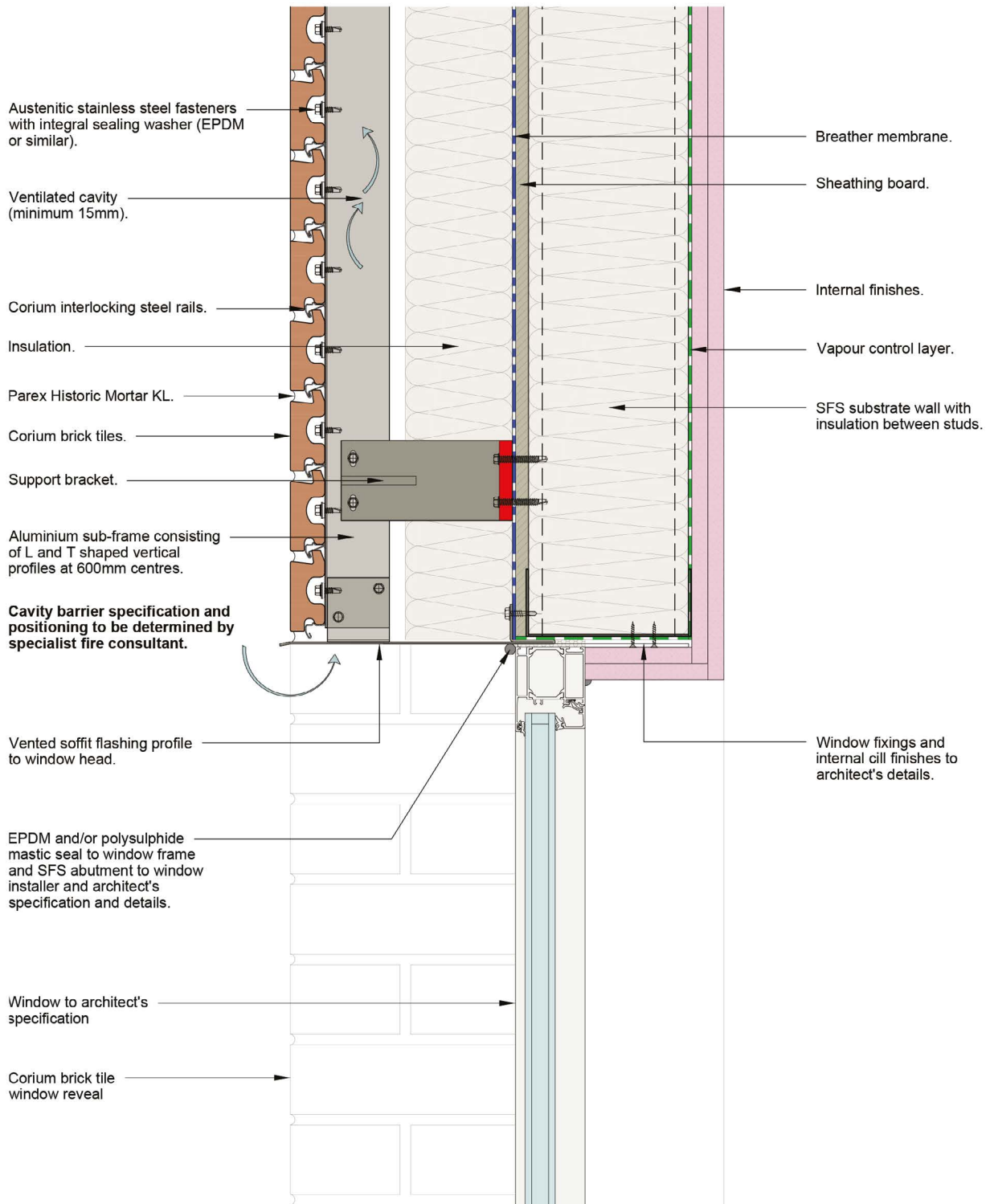
6.2 Ground Floor Slab Detail



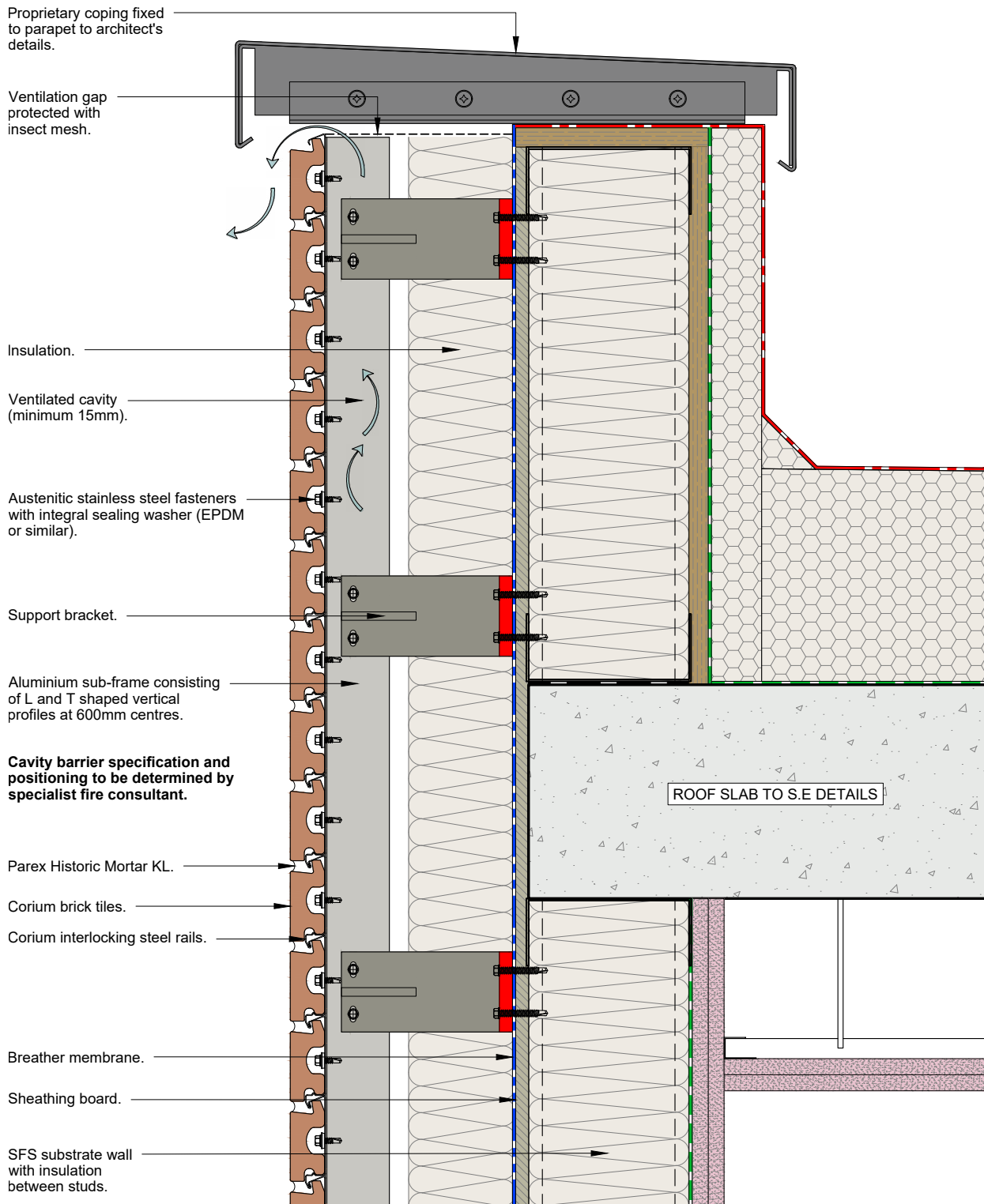
6.3 Window Cill Detail



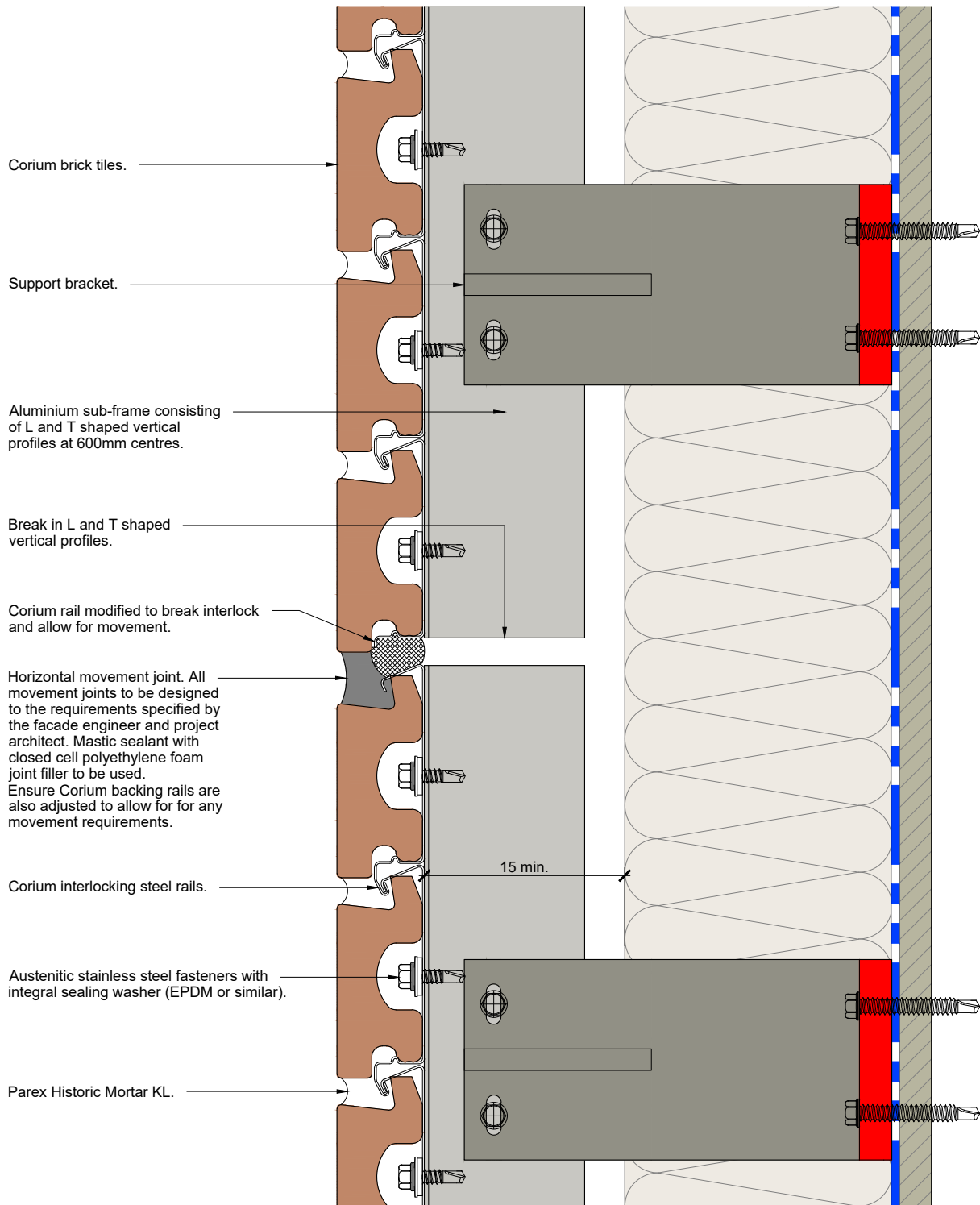
6.4 Window Head Detail



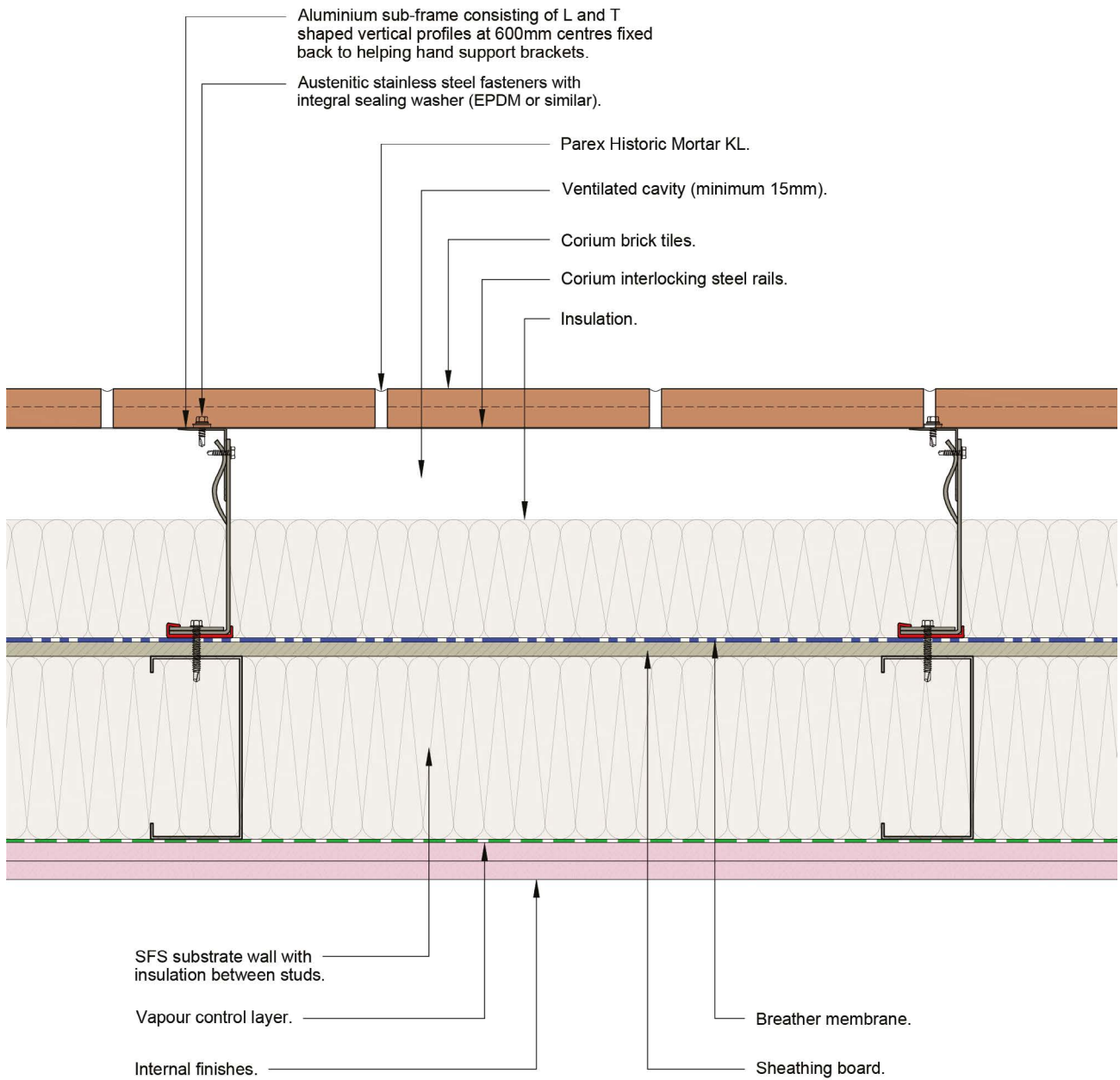
6.5 Parapet Detail



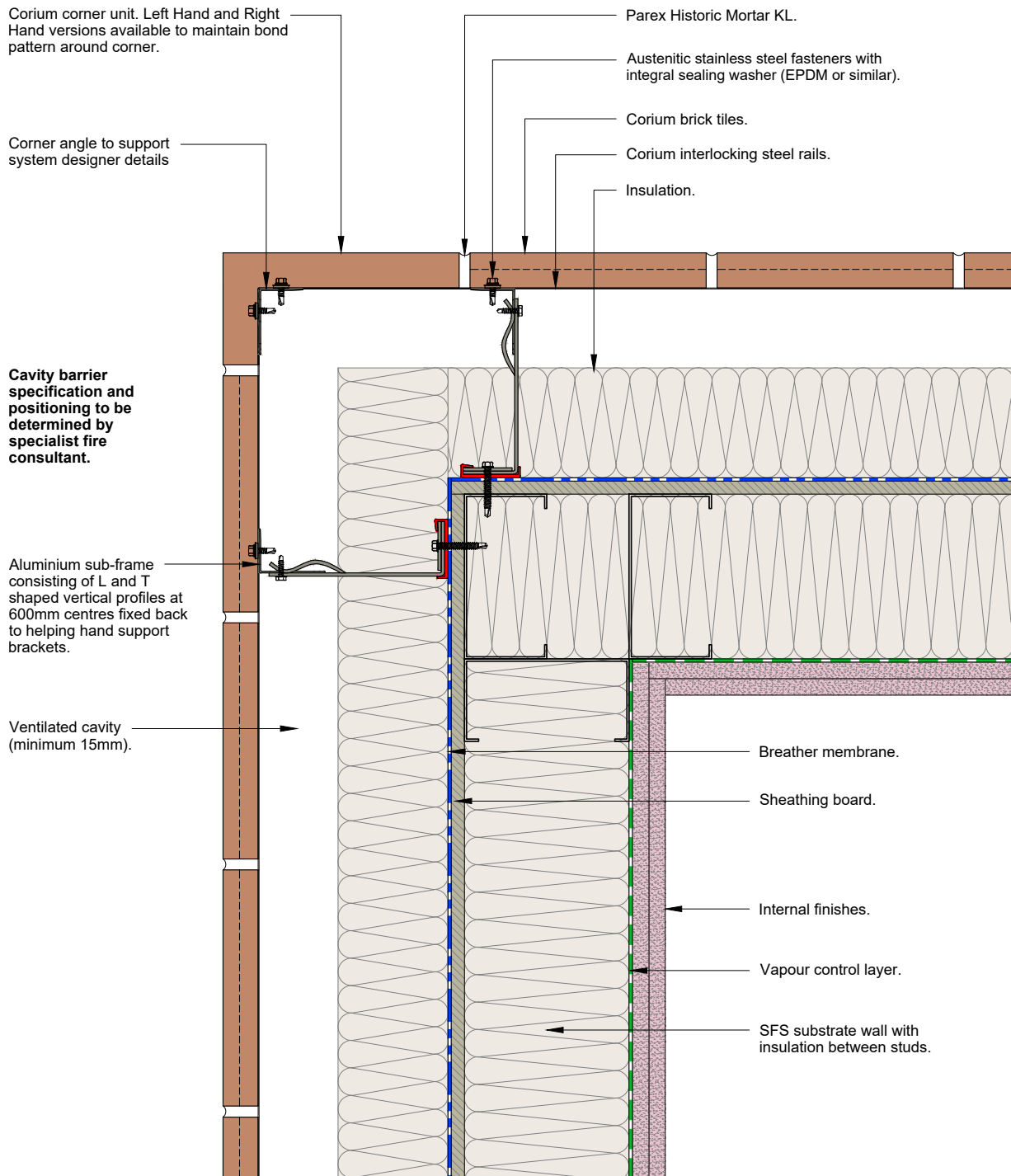
6.6 Horizontal Movement Joint Detail



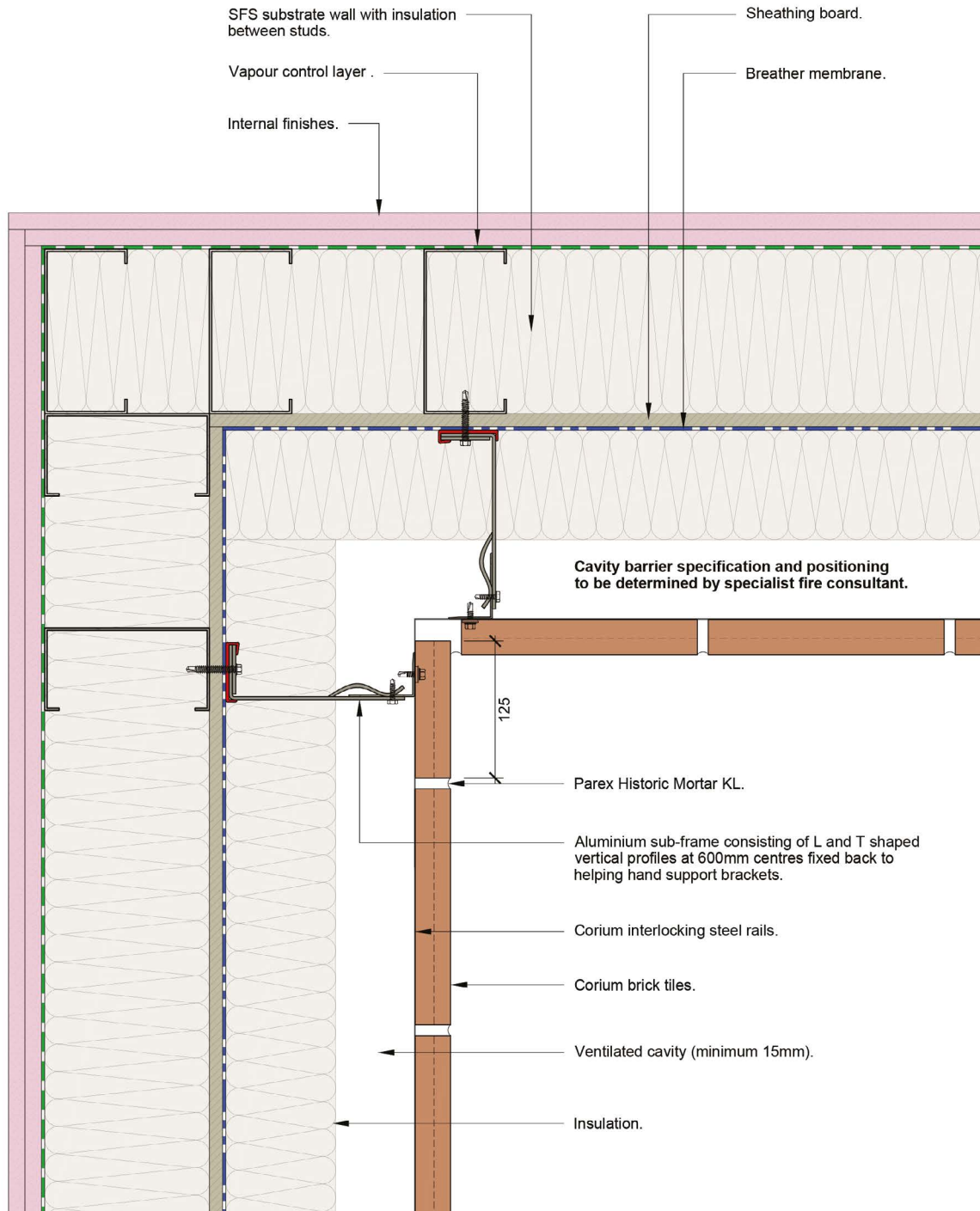
6.7 Typical Wall Build-up (Plan)



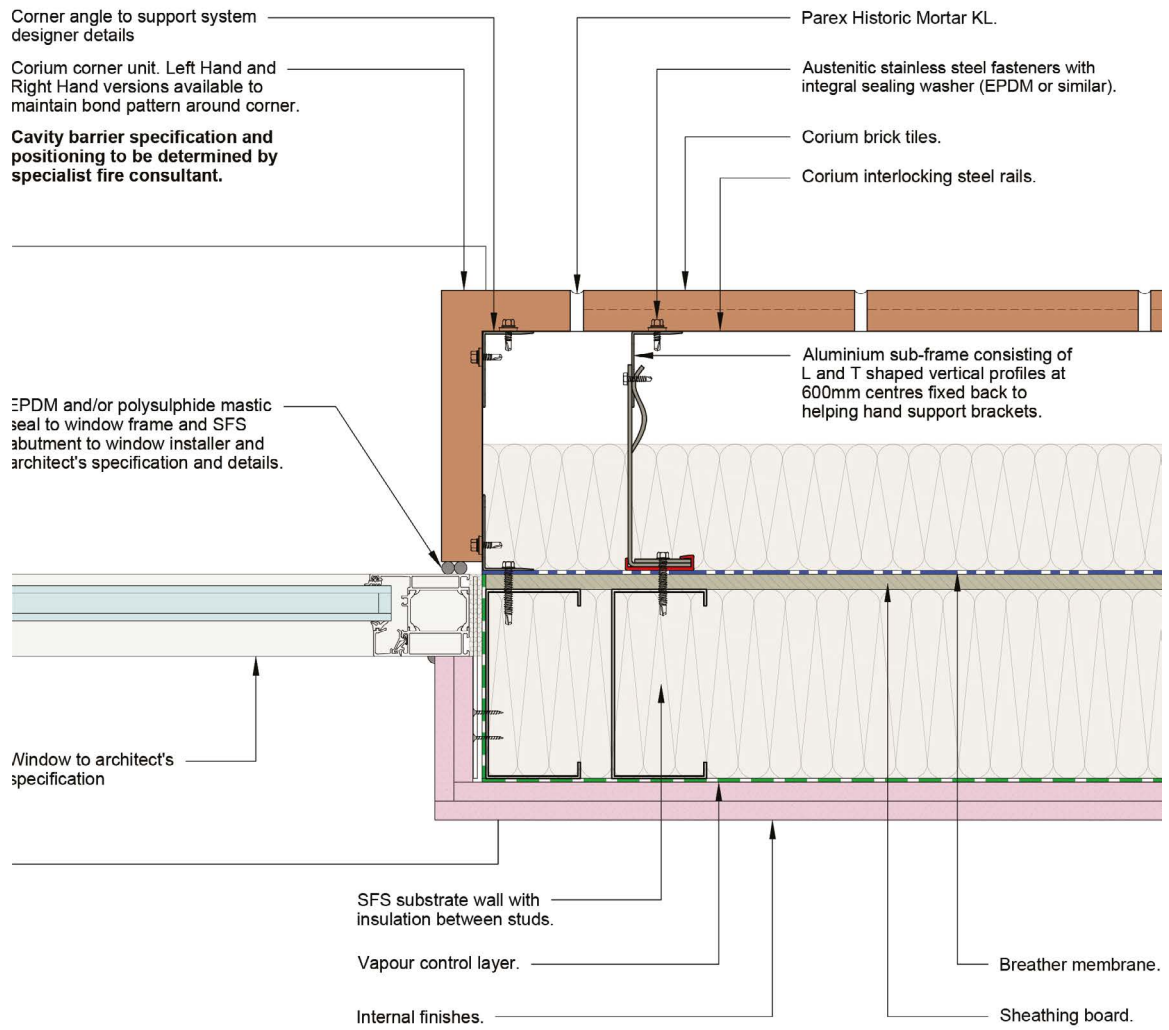
6.8 External Corner Detail



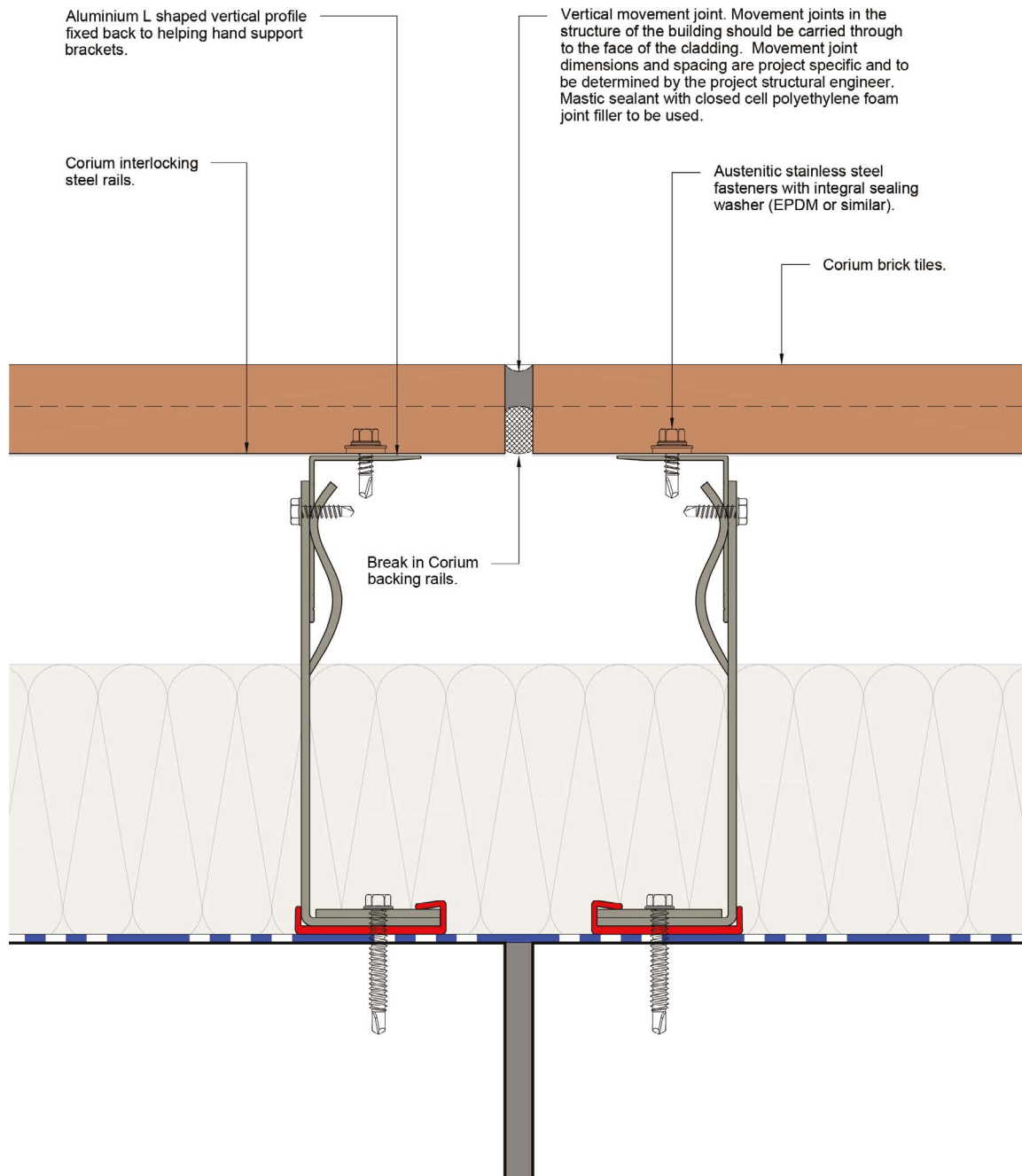
6.9 Internal Corner Detail



6.10 Window Jamb (Brick Reveal)



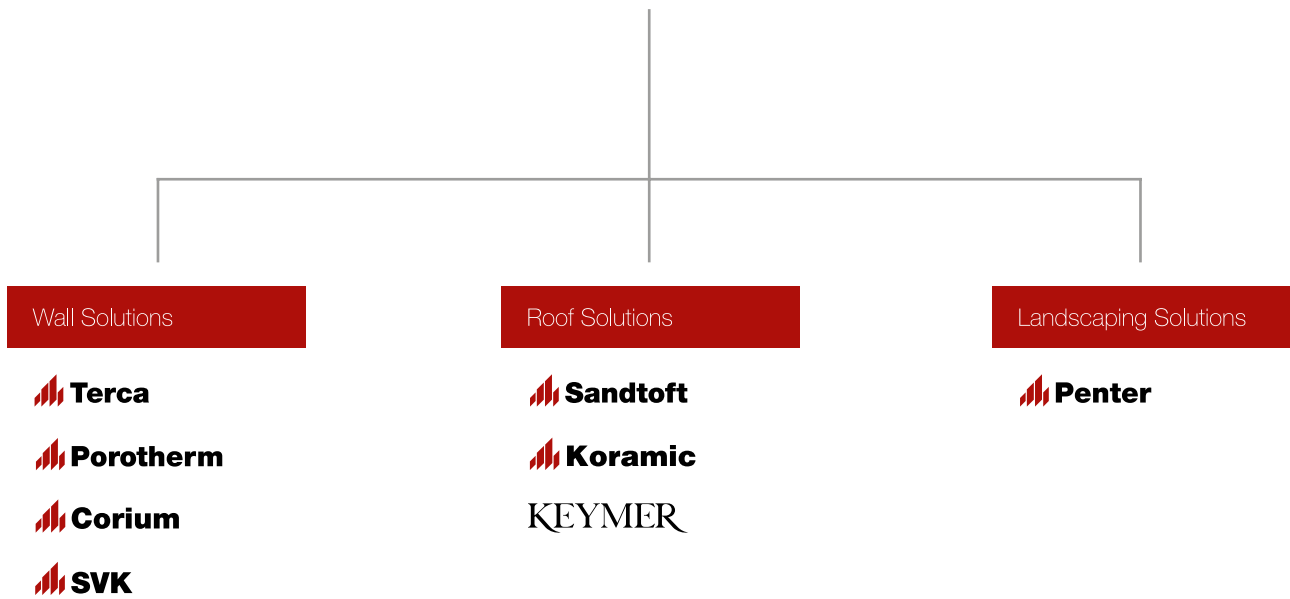
6.11 Vertical Movement Joint Detail




NOTES



Wienerberger



Wienerberger Ltd
Wienerberger House
Brooks Drive
Cheadle Royal Business Park
Cheadle, Cheshire
SK8 3SA

 T: 0844 939 5900
F: 0844 939 5950

 wbukfacades@wienerberger.com

 [@wienerbergeruk](https://twitter.com/wienerbergeruk)

 www.wienerberger.co.uk

