

 **CORIUM****Installation Guide****Version 1 – August 2017**

This guide should be read in conjunction with the Corium Approved Installer Requirements, a copy of which is enclosed in the Corium Approved Installer Pack.

The 'system' comprises fired-clay tiles and the steel backing sections into which they clip. Insulation, support systems, vapour membrane and fasteners can be specified according to the requirements of the substructure. Corium is supplied and fixed by Approved Installers approved by Wienerberger Ltd.

Installers should ensure that they have the correct tools to carry out the work, e.g. suitable cutting equipment for both steel sections and tiles, non-marking rubber mallet, lever to remove tiles, section setting out gauge, long spirit level, electric drill/driver fitted with torque head to prevent over/under-tightening, appropriate protective equipment, etc.

1. Substructure

The face to which the system is fixed should be flat, vertical and capable of supporting appropriate loads. Supports are required at 600mm horizontal centres as set out in drawing CM-FX-01.

Breather Membrane

Water penetration of the finished cladding is very limited but in all cases, it is recommended that when the system is fixed directly to the face of a wall, a continuous waterproof breather membrane is incorporated on the back face of the steel backing section.

Refurbishment

If the system is to be used in a refurbishment situation, then adjustable stand-off systems are recommended such as Plastestrip or Nvelope helping hands. The brick system is secured to the stand-off system in the usual manner at a maximum of 600mm C/C's. Top hat, 'Z' sections or timber battens may also be used on suitable structures.

NHBC

To satisfy NHBC requirements for housing applications it will be necessary to leave at least a 15mm cavity between the Corium cladding and any framed substructure.

2. Backing Sections

Below DPC

The system may be used below DPC level and into the ground. A DPC is not required unless there is a likelihood of standing water or a risk of staining. Where specified, a DPC can be trapped between the steel backing section and top of the tile. Any DPCs fitted should be in accordance with drawings CM-DP-01.

0.55 mm 304 grade stainless steel sections without coatings are used below DPC level or where the system is likely to be in contact with standing water.

Standard sections are supplied in packs containing approximately 16.204m² and weighing approximately 120kg.

Setting out

The sections are generally supplied in 2.4m lengths. Lengths are butt jointed over supports and joints should be staggered between adjacent sections (see drawing CM-FX-01) unless the area is less than 2.4m wide in which case the sections need not be staggered.

Corners

Steel backing sections are butt-jointed into the corners over the steel corner angle accessory. All as drawings CM-SF-12 & 13. The use of a laser level is recommended to align the backing sections around the corners.

Fitting

Ensure all backing sections are clipped together using the interlock action of the formed sections.

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.

Always work from the top to the bottom.

See drawing CM-FX-01 for fastener locations.

When installing soldier 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 profiled can then be adjusted to suit the dimensions of the soldier tile and fixed accordingly.

Cutting

Lengths of steel can be cut to size using a jigsaw set suitably slow speed or a hacksaw. Do not use methods which may generate high temperatures such as abrasive disc cutters as this damages the plastisol coating. Experience during trials has shown that a circular mitre saw fitted with the correct type of blade can be used to produce accurate cuts of acceptable quality. The equipment used consisted of a DeWalt DW872 110V Metallica chop saw fitted with a DeWalt DT1900 blade for cutting standard section of DT1900 stainless for cutting stainless steel section. A Sheet nibbler should not be used as this would cause the dutch fold to fill. All rails to be cleaned carefully to remove all traces of cutting swarf, etc. immediately after cutting and should be checked for cleanliness before tile installation.

Fasteners (see drawing CM-FX-01)

Fasteners are positioned along the continuous horizontal scribe, which is provided on all steel backing sections. Fasteners are required at the ends of all steel sections at 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). A stand-off or high thread fastener is recommended when fixing through insulation. This prevents the insulation being crushed at the point of fixing. The 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.

Austenitic stainless steel fasteners with integral sealing washer (EPDM or similar) under the head should be specified to suit the support material to which Corium is being fixed.

All fasteners are to have minimum mechanical performance figures of:

Fastener ultimate shear strength	⇒	6.5kN
Fastener ultimate tensile strength	⇒	9.0kN
Fastener ultimate pullout strength	⇒	2.0kN
Fastener ultimate pullover strength	⇒	3.6kN

Always follow manufacturer's instructions and recommendations.

3. Brick Tiles

Tile size and shape tolerances are checked at the works however the installer should double check each consignment prior to installation and report any discrepancies to the Corium product manager. The Corium tile specification showing the appropriate tolerances is attached.

Standard tiles are available in accordance with the current Corium brochure and have exposed face target dimensions of 215 x 65mm unless otherwise stated. They are supplied shrink wrapped on pallets containing 960 no. units (approx. 16m²) weighing approximately 768kg. Other packaging format are available on request.

Standard specials are also available as shown in the Corium brochure.

Fitting

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

Tiles are simply inserted into the steel with the top of the tile first. Applying a slight cushioned blow to the bottom of the tile with a 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 the risk of 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.

Cutting Lengths

To cut the required length or special shape (if required) of tile, a wet diamond-tipped saw is used.

Airbrick Tiles

These provide 1626mm² (11.5%) unobstructed air space other designs available upon request). Backing sections will need to be drilled with the equivalent free air space at the positions of the airbricks. Stainless steel sections are recommended behind airbrick tiles.

Corner Tiles

An external corner tile (CM.1 or CM.1B) is clipped in place in the normal manner expect the shorter length of the tile is left overhanging the tile below. Once the tile is inserted then it is positioned by applying a slight cushioned impact directly on the corner of the tile.

Pre-cut corner sets (CM.1A) can also be supplied for external corners and angles. The installer should apply an epoxy bonding agent to the mitre cut face of both 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 tile.

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 traditional construction internal corner.

Fixing to face of Tiles

The thickness of the tile along the centre-line is 15mm. the pullout strength of the system before cracking of mortar is 0.5kN or 50kg. Care should be taken not to exceed this. In cases where more strength is required, the operator should use a heavier fastener which penetrates the steel backing. These fasteners should be positioned so as not to interfere with the steel backing fasteners.

Holes/Penetrations

Holes larger than 12mm should be formed by first removing the tile (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 polyurethane foam or other suitable 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 polyurethane foam or other suitable sealant.

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

Openings

For opening reveals of less than 15mm, a standard tile will replicate traditional masonry.

Stop end tiles CM.2 of 32mm depth can provide a cost-effective solution for reveals between 15 and 30mm.

For opening reveals greater than 30mm, a standard corner tile can be used which allows a reveal depth of up to 102mm. a corner angle accessory will need to be cut to suit the desired depth of reveal.

For reveals up to 102mm where the tile is fitted between the structure and the window frame there is no requirement for a backing section to be fitted on the reveal, reveals over 102mm may require a backing section.

4. Mortar

Mix

The pointing and mortar mixing must only be carried out by approved Corium installers or contractors using systems approved by Wienerberger Ltd. Mortar is applied using manual, mechanical or compressed air based pumps with controlled nozzle applicators. Pre-bagged mortars, in a range of colours, and designed for use in pump systems are available. Historic KL by Parex (Tel 01257 224900) was developed specifically for use with Corium and its use is recommended.

Pointing Profile

Flush or slightly bucket-handled profiles are acceptable.

5. System

Stainless steel backing sections are used below DPC level.

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.

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

The joint should be filled with proprietary filler such as Compriband VSA or a sealant such as two-part polysulphide sealant. Typical details are shown on drawings no.'s CM-SF-16 & 17 copies of which are attached.

Quality

Before proceeding, a site reference panel should be agreed by all parties.

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 3m is recommended.

Wastage

A tile and steel waste factor of 5% should be expected. Other wastage factors must be assessed and allowed for by the Approved Installer.

Further information on any of the above is available from the Corium design office.

The above guidance is offered in good faith; however, Corium Approved Installers should ensure that all relevant guidance such as NHBC, British Standard and HSE requirements are met.