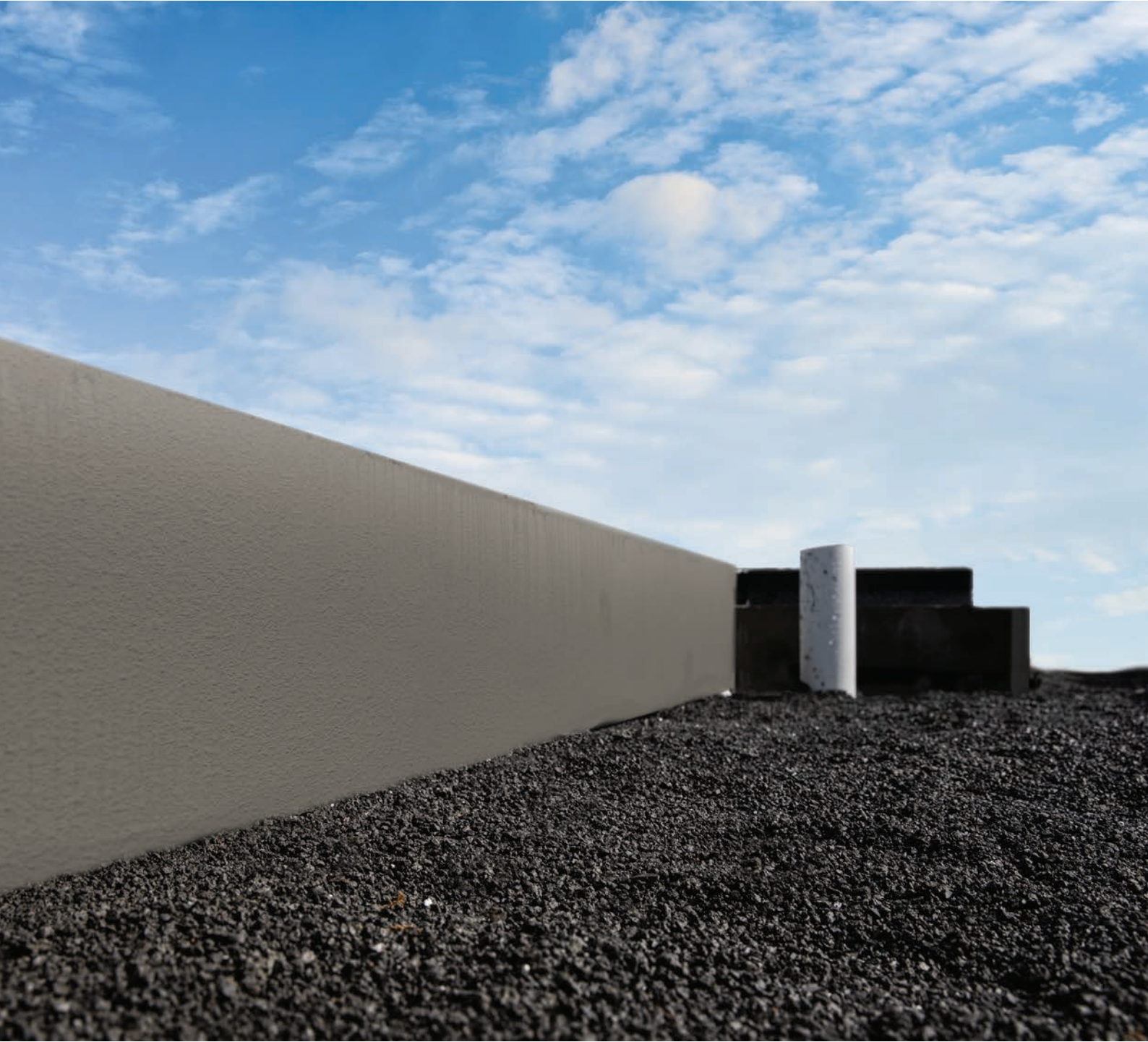




AUGUST 2023
Interim Version

+Ribraft® HotEdge® installation guide



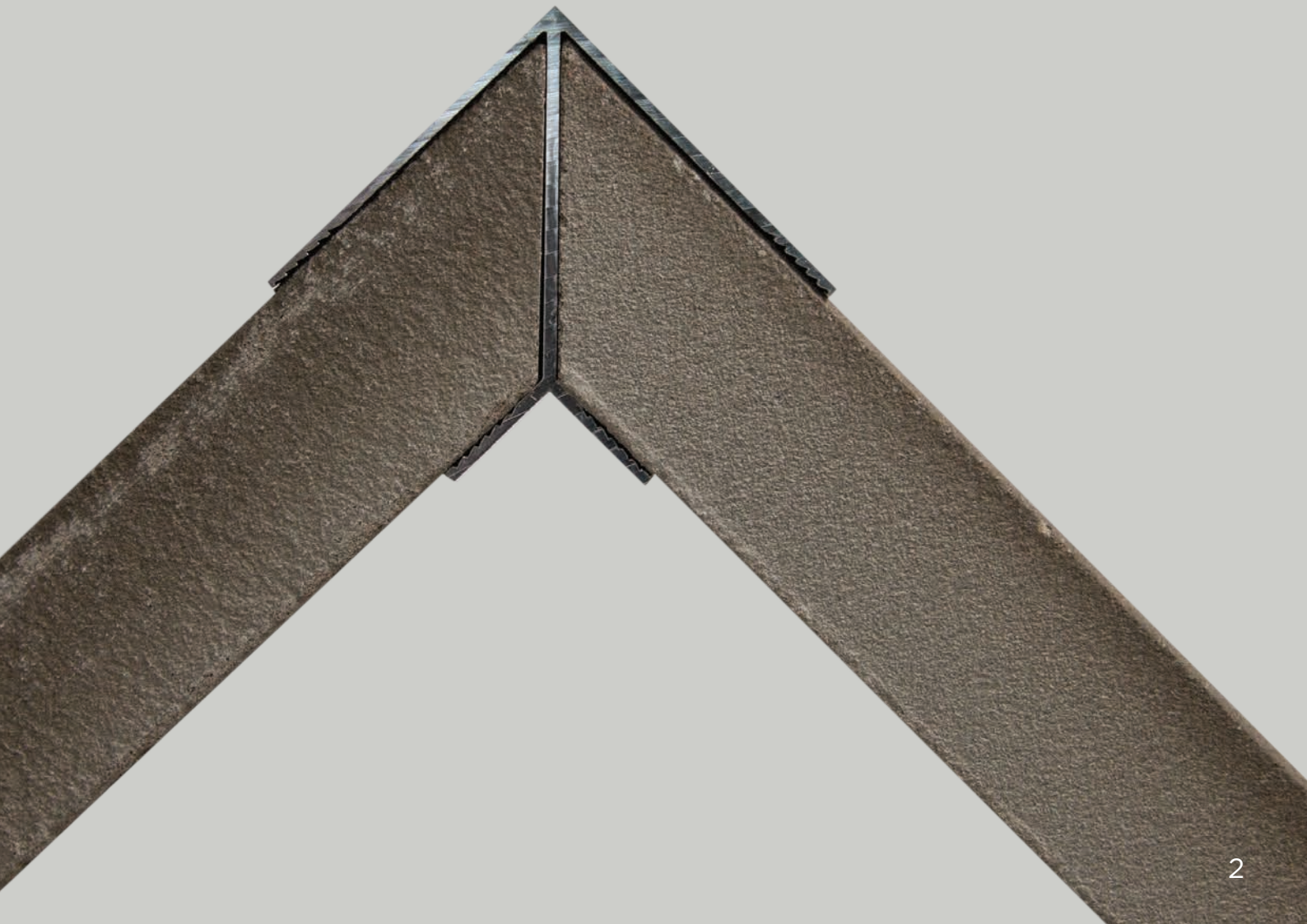
THIS INSTALLATION GUIDE HAS BEEN DEVELOPED FOR FIRTH RIBRAFT HOTEDGE® PRODUCTS. RIBRAFT HOTEDGE® AND HOTEDGE EXTRA® ARE FULLY INTEGRATED SLAB EDGE INSULATION SYSTEMS DESIGNED SPECIFICALLY FOR FIRTH RIBRAFT FLOORS USING FIRTH RAFTMIX® CONCRETE.

RIBRAFT HOTEDGE® IS FOR USE WITH BRICK VENEER CLADDING SYSTEMS. HOTEDGE EXTRA® IS FOR USE WITH NON-BRICK VENEER CLADDING SYSTEMS

SITE/EARTHWORKS

RibRaft HotEdge® and HotEdge Extra® do not affect bearing pressures or foundation requirements, therefore earthworks, cut, fill and bearing checks to remain as per Firth RibRaft® Technical Manual or specific engineering design.

Foundations with HotEdge Base® need to be specifically engineered.

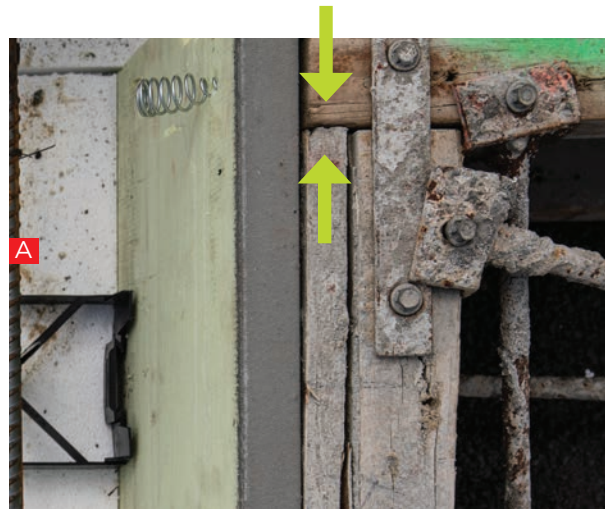


NOTE: the use of **board** in the following instructions refers to both HotEdge® or HotEdge Extra® products unless specifically stated otherwise.

FORMWORK SETUP

Perimeter Formwork shall be set to profiles or string lines with top edge at finished floor level (FFL). Setting level of Formers must allow for variation across prepared base and final hand screed of sand blinding layer (to +/- 5mm).

- Formwork must be braced to ensure minimal movement occurs under full load of wet vibrated concrete and construction loadings
- Ensure butt joints between adjacent Formers are tight (**see Image A**) to reduce chances of concrete grout spillage between Formers onto boards exterior surface.
- Fix HotEdge® to Formwork before installing brick Rebate Formers.



HOTEDGE® BOARD SETUP

DANDAM TAPE

For the best finish, we recommend (and supply with your order) DanDam Foam tape to be used on the top and bottom of the boards (**see Image B**) to reduce concrete spill between Formwork and the board.

This reduces the amount of tidying up work required on the external surface due to spills.

Tape will adhere to a damp surface, however if board is wet, dry with rag and lay face up for surface to dry.



TORNADO SCREWS

Fasten Tornado screws to boards using battery drill and #3 Phillips head driver or screw in by hand.

- Screw Tornado screws 15mm to 20mm into board.
 - Tornado screws are designed to lose traction with Phillips head driver under torque load to help prevent being screwed through the board, damaging the exterior plaster finish.
 - Use low clutch torque setting if using a battery drill or similar.
- Install Tornado screws at 300mm centres, staggered top and bottom, 25-40mm from top and bottom edges.
 - Bullseye target locators are printed on inside face of boards as a guide (**see Image C**).
- For short lengths of board use a minimum 3 screws to ensure secure integrated with slab.



INSTALLATION

REBATED BRICK VENEER CLADDING EDGE BEAM DETAIL

Use chalk line to mark boxing **25mm** below where the Rebate Former will be positioned as reference datum to align HotEdge® (see Image D). There **must** be this 25mm gap from the bottom of the rebate former to top of HotEdge® (BV) boards to create a chamfer for the brick veneers to sit on.

NOTE: for HotEdge Extra® boards the top should be level with the finished floor level (FFL) and not covered by a concrete chamfer.



HOTEDGE® & HOTEDGE EXTRA® - FIXING METHOD

- Starting from an external corner, mitre cut board and fit end into aluminium corner profile using flexible sealant (i.e. MS or Polyurethane) to secure.
- Working away from corner, join board lengths at shiplap joint (see Image E) and bond with sealant.

Do not attempt to cut and reform new shiplap joint, rather cut required length at the next corner (mitre at external corner, butt joint at internal corner).

If board is to be fitted below garage door rebate or flush aluminium joinery rebate, width of board may need to be reduced.

- A masonry carborundum or PCD fibre-cement board tungsten tipped blade (see Figure 1) can be used to cut a strip from lower edge.
- Cut edge **MUST** be painted with bituminous type waterproof membrane (e.g. Mulseal type product as used to seal brick veneer rebate).



Figure 1



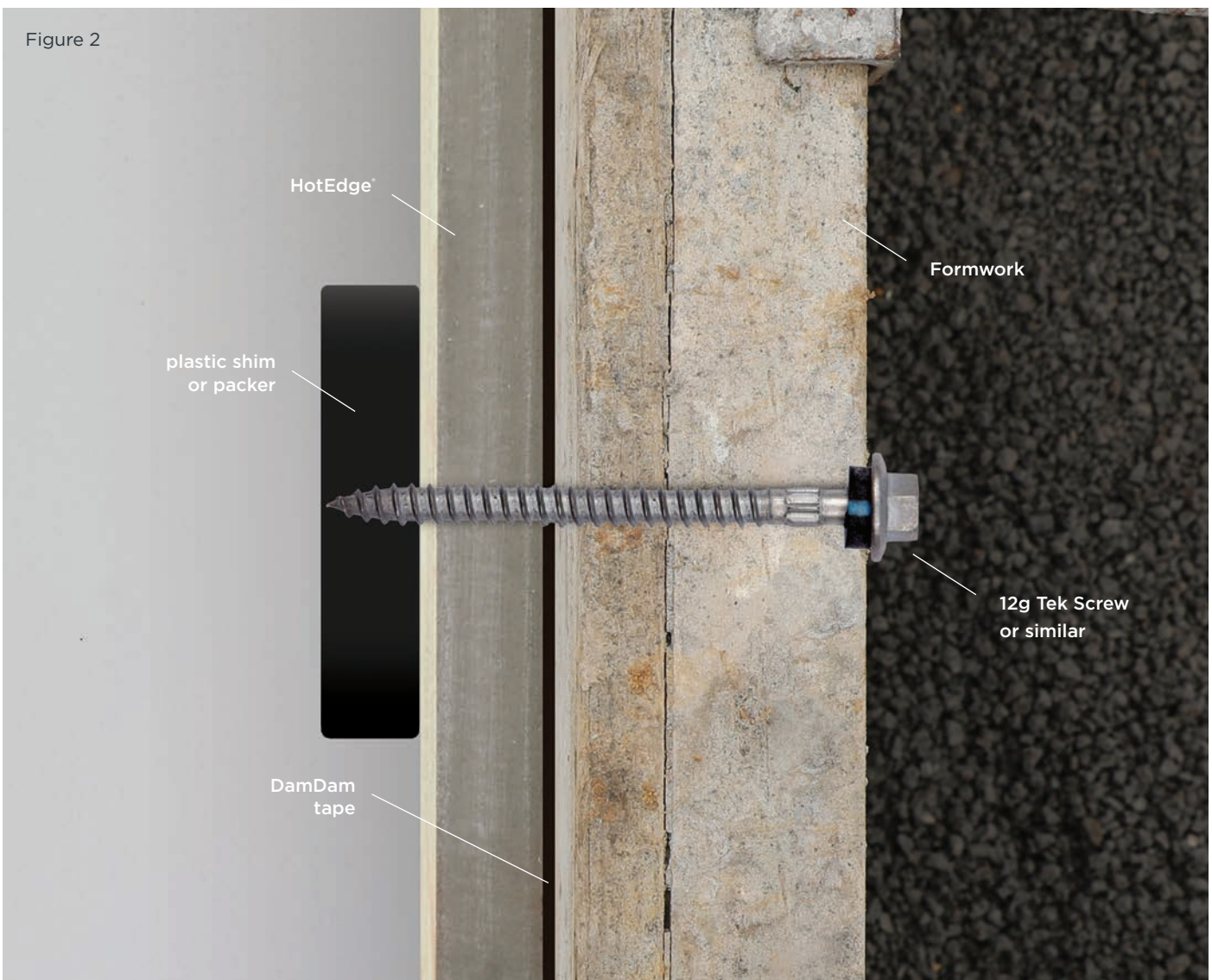
Secure boards directly to Formwork with 12g Tek screws or similar with large head (easier to find during removal) to hold boards in place.

- Screw through Formwork and board into a plastic backing block such as a shim or packer to hold the board firmly against Formwork (see Figure 2) so there are no gaps along the DanDam tape.
- Space screws at 1.5m centres or closer as required to ensure there are no gaps between the DanDam tape and Formwork.

NOTE: this method will cause minor damage to the finished surface when screws are removed. Use Firth's TidyUp for RibRaft HotEdge® plaster formula to patch screw holes and any other damage to finished surface.

Special attention should be paid to ensure all Tek screws are removed before the Formwork is pulled off slab edge. Major damage can be caused to the installation if any screws are still in place when Formwork is removed.

Concrete spills and dirt/debris from a construction site can easily hide screw heads. Firth recommends marking all screws heads with spray paint, to clearly mark fixing locations.



HOTEDGE EXTRA® - ALTERNATIVE FIXING METHOD

The recommended method provides rigid connection, however drilling through Formwork, plus repair of penetration in HotEdge Extra® profile may not be suitable for some installers/customers.

A 19mm polypropylene strapping with plastic buckles and tensioned by hand or fixed with plastic buckles (tensioned by hand) or a hand stapler, can be used to secure HotEdge Extra® boards to Formwork.

- Pass strap around and under HotEdge Extra® board so both ends can be secured against the external face of Formwork with plastic buckle or hand stapler.
 - Strap should be tensioned enough to prevent HotEdge Extra® board rising when concrete is poured but not too tight as to cause damage to the finished surface.
- Strap to Formwork at maximum 1.5m centres
 - Closer spacing may be needed if gap forms between DanDam tape and Formwork.

The polypropylene strap **MUST** be cut/removed from HotEdge Extra® prior to removal the Formwork or the HotEdge Extra® boards will be torn from the slab.



HOTEDGE BASE® INSTALLATION

The 300mm HotEdge Base® insulation sheets are installed on top of the DPM and flush to the inside face of the HotEdge®, HotEdge Extra® boards.

The sheets are butt joined at corners and at sheet joints to ensure no gaps are present. Rib reinforcing needs to be cranked to ensure minimum concrete cover is achieved.

CONCRETE INSTALLATION

HotEdge®, HotEdge Extra® and HotEdge Base® thermal parameters have been measured with the use of Firth EcoMix RaftMix® concrete. This mix is designed to have a suitable strength at a higher slump (target 120mm). The mix also incorporates additives to ensure concrete flows into place (with immersion type vibrator) around Tornado screws and over the top of the HotEdge® board chamfer.

Pumping concrete is typically the only method of delivering the fresh concrete to the work face. Other methods of delivery may be suitable however approval from Firth or project engineer is required.



- 1.** It is preferable to start a pour at the garage (allows a harder, flatter finish), and work away. Controlling the flow from the pump nozzle is crucial, and in no circumstances shall concrete pressure be directed between and under pods.
 - a.** If RibRaft® or X-Pods® lift during pouring, stop pour immediately and clean concrete out from under pods.
 - 2.** Follow behind pour face with immersion (spud) type vibrator to all concrete (beams, ribs and top slab). Adequate vibration is essential to ensure structural integrity and consolidation around reinforcing and HotEdge® and HotEdge Extra®.
 - 3.** Care must be taken to avoid vibrator coming in contact with HotEdge® and HotEdge Extra®, to prevent damage and movement.
 - a.** If movement or damage occurs during pouring, stop the pour, remove concrete around board and repair or securely reinstated as required.
 - 4.** Following vibration, normal concrete finishing techniques shall be carried out.
 - 5.** To prevent plastic cracking in hot and/or windy conditions during the pouring/ finishing, steps must be taken to protect the concrete. Such as the use of:
 - a.** Aliphatic alcohol sprays
 - b.** Water vapour misting over surface (e.g. from water blaster directed upward so wind carries mist over slab surface)
 - c.** Positioning wind breaks
 - 6.** Curing the slab is crucial to ensure strength gain of concrete and protection from early age cracking. Suitable methods of curing include:
 - a.** Water spraying/ponding
 - b.** Curing membrane sprays
 - c.** Polythene covering
 - 7.** If environmental conditions forecast greater than 15 degrees variation of daytime to overnight temperatures, then measures to protect slab from thermal shock should be used, these include:
 - a.** Continuously running or spraying water over surface overnight
 - b.** Covering surface with fabric, plastic tarps or polythene
- Shrinkage saw cutting of top slab is typically required, however specific shapes and sizes of floor plan may have no cuts or special requirements, refer project drawings for requirement or placement, or Firth RibRaft® Technical Manual.
- Formwork is not be removed on day of pour and, in very cold or shaded locations, Formwork should (ideally) be left in place for 2-3 days following pour.

REMOVING FORMWORK

Prior to removing Formwork remember to **remove all Tek screws** used to secure HotEdge®, HotEdge Extra® in place during the pour.

Any polypropylene strapping used with HotEdge Extra® must be cut or removed prior to Formwork being removed.

Formwork shall be gently pried from edge beams, ensuring MS sealant to top edge of HotEdge®, HotEdge Extra® pulls off Formwork without causing damage or dislodgement to the top edge of boards.



FINISHING

Shiplap joints and other gaps shall be filled with MS or polyurethane type sealant.

Damage or holes in finished plaster face need to be patch using Firth **TIDYUP**® repair product available from Firth (see Image G).

Apply 2 coats of acrylic building paint to HotEdge®, HotEdge Extra® boards (and any exposed vertical surface of the slab perimeter above HotEdge®) to ensure long term durability and performance.

Firth HotEdge®, HotEdge Extra® and HotEdge Base® are warranted in accordance with New Zealand Building Code B2, clause B2.3.1(b)(i) refer to our website for details.

Care must be taken when using hand tools (hammer, spade, etc) and power tools (line trimmers, etc.) near installed **HotEdge® and HotEdge Extra®** boards to avoid damaging finished surface. Also avoid standing on the top of HotEdge Extra® boards as you move about the construction site as this may cause damage to the finished surface.

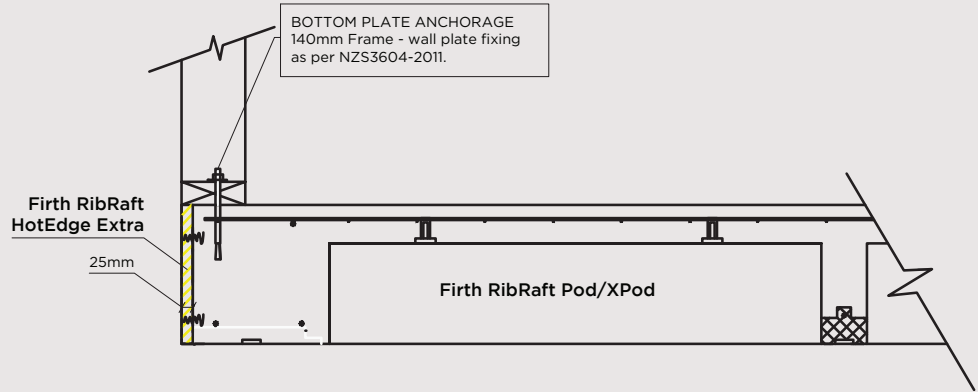
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CONSTRUCTION DETAIL

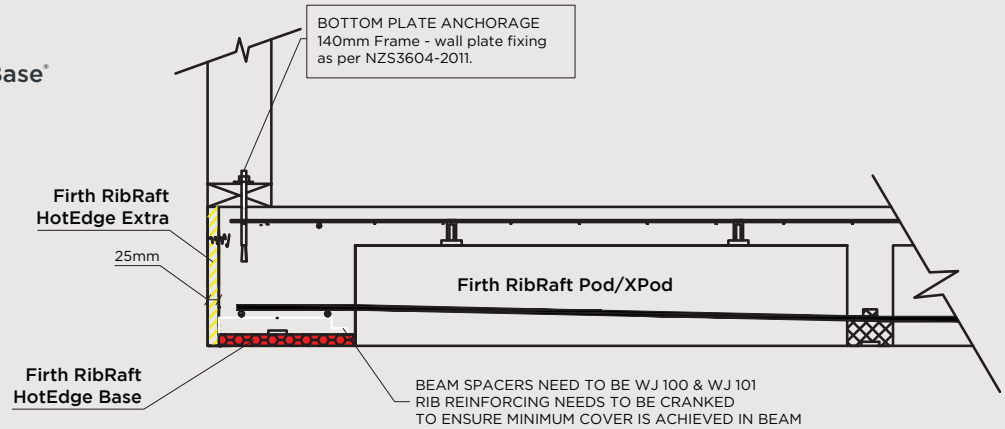
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FIRTH RIBRAFT
HotEdge[®] Extra
140mm Frame
Firth RaftMix[®] 20 or 25MPa



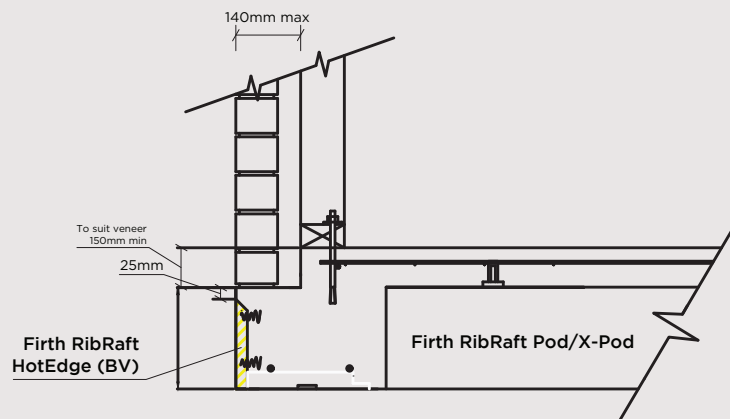
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FIRTH RIBRAFT
HotEdge Extra[®] & HotEdge Base[®]
140mm Frame
Firth RaftMix[®] 20 or 25MPa



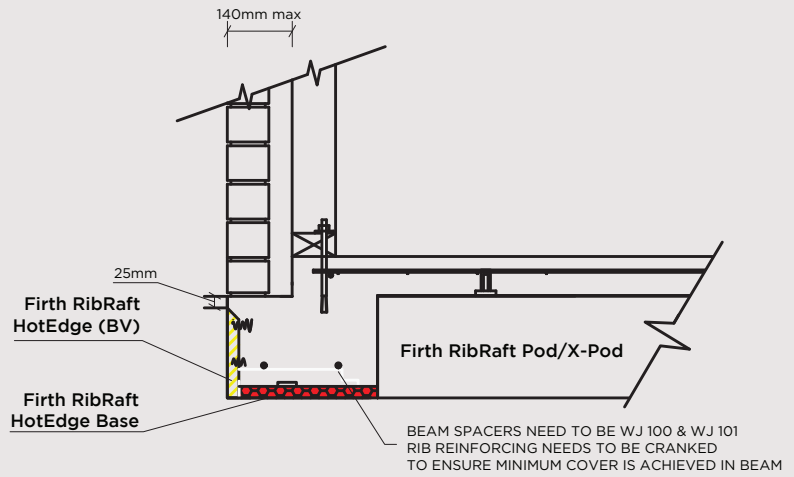
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FIRTH RIBRAFT
Brick Veneer HotEdge[®]
Firth RaftMix[®] 20 or 25MPa



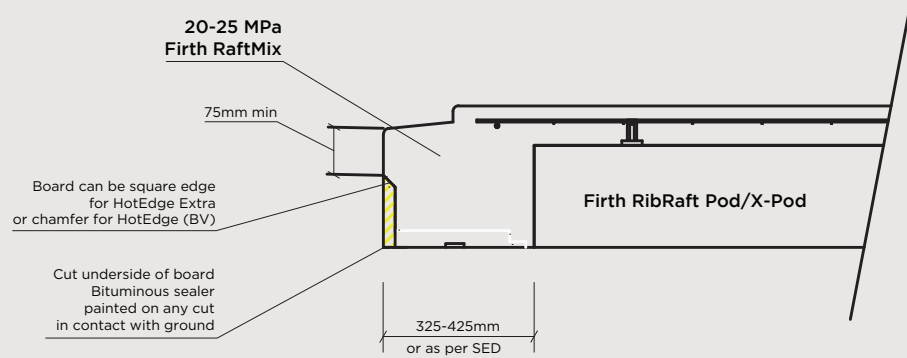
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FIRTH RIBRAFT Brick Veneer HotEdge® & HotEdge Base® Firth RaftMix® 20 or 25MPa



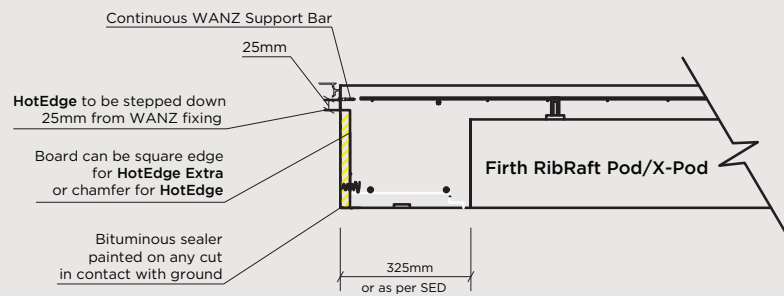
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GARAGE DOOR STEP CONSTRUCTION DETAIL

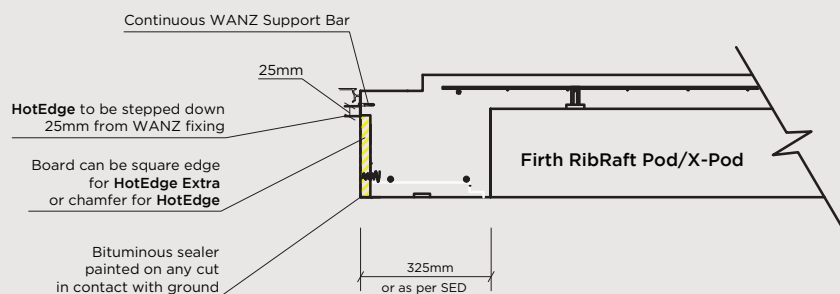


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FIRTH RIBRAFT HOTEDGE® JOINERY DETAIL

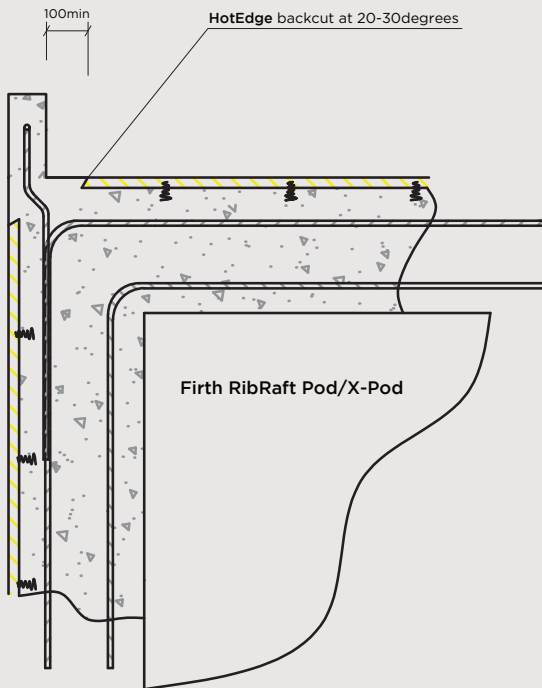


FIRTH RIBRAFT HOTEDGE® JOINERY DETAIL - REBATE



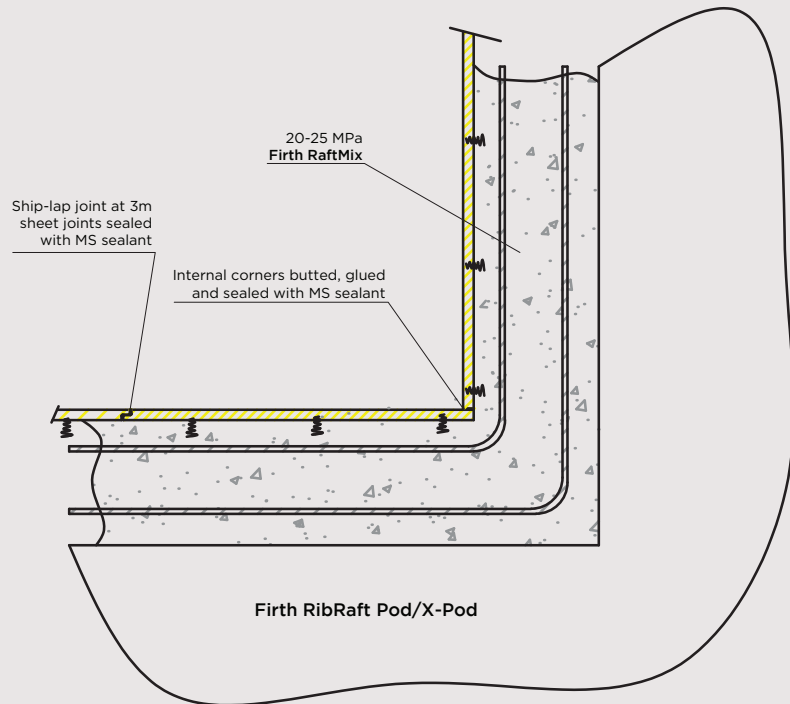
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PLAN - WING WALL CONSTRUCTION DETAIL



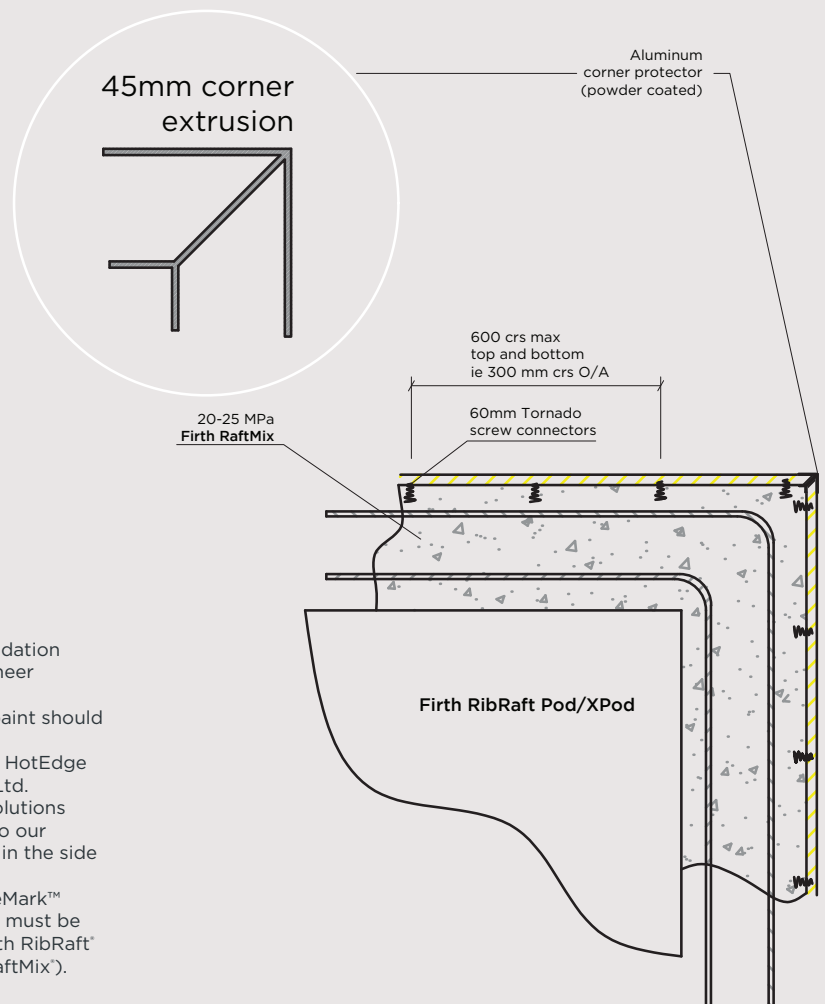
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PLAN - INTERNAL CORNER CONSTRUCTION DETAIL



9

EXTERNAL CORNER CONSTRUCTION DETAIL



- HotEdge® and HotEdge Extra® are pre-mesh/plastered foundation edge insulation systems for Brick veneer and non-brick veneer (respectively) cladding systems.
- For optimum service life and insulation, 2 coats of acrylic paint should be applied to all exposed surfaces.
- The thermal performance of HotEdge®, HotEdge Extra® and HotEdge Base® have been 3D modelled by Sustainable Engineering Ltd.
- For construction R-values of RibRaft foundation thermal solutions using HotEdge®, HotEdge Extra® and HotEdge Base®, refer to our R-value Calculator on the Firth website Resources page or in the side toolbar on the RibRaft HotEdge® Range page.
- HotEdge® has been designed to be used with RibRaft® CodeMark™ products. Inclusion in specifically engineered floor systems must be checked and approved by CPeng, while using standard Firth RibRaft® details and materials/components (e.g. Firth 20/25 MPa RaftMix®).



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