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Critical Detailing Information

Wetherby Insulated Render and Brick Slip Systems

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THE IMPORTANCE OF CRITICAL DETAILING

Installing the Wetherby EWI system correctly is imperative in ensuring the system remains effective and reduces the risk of failures or damage for many years after installation. The longevity of the system is dictated by the projects detailing and, if detailed correctly, there will be far less system staining and maintenance required.

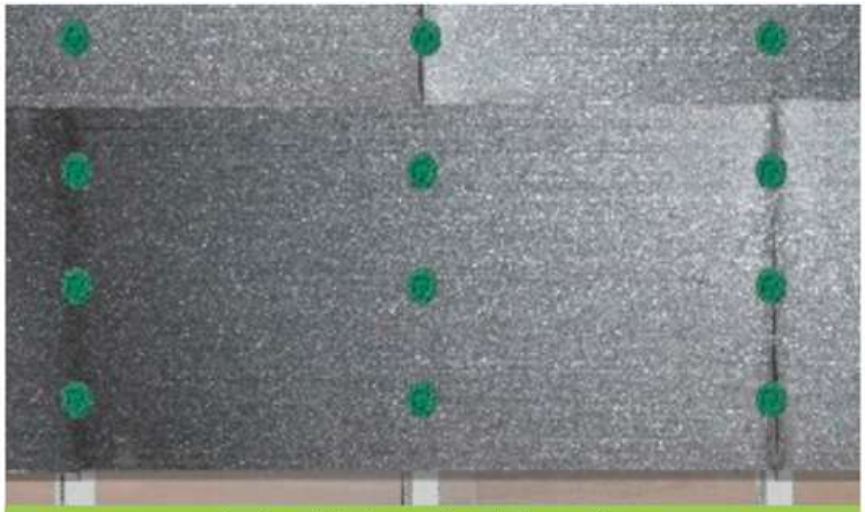
This document aims to provide simple guidance on the Wetherby EWI systems critical details. The photos included are of various EWI system manufacturers and installers, many unknown.

The details covered in this document are specific areas for attention to improve installation. A system specification and full detail drawing pack should always be provided to operatives before installing Wetherby systems.

CONTENTS

1.0 INSULATION BOARD FIXING PATTERN

5 fixings per insulation board

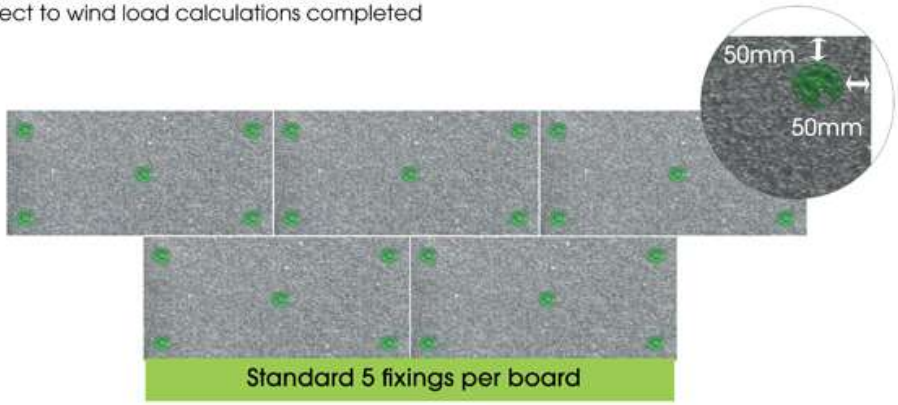


Epsitec / timber batten fixing pattern

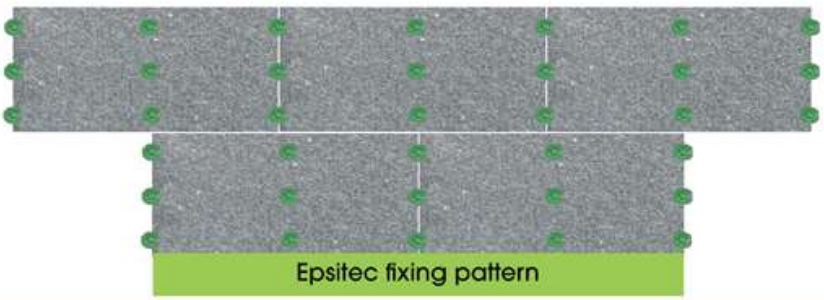
- Standard 5 fixings per board*
- Total of 6 fixings per board for Epsitec / timber batten or for fixing into studwork*
- Boards staggered and butt jointed
- Overlapped at building corners and no board joints within 200mm of corners or openings

(*Fixing pattern subject to wind load calculations completed for the project)

- Sealing tape advised when abutting disimiliar materials / flashings
- Gaps foam filled
- Boards no smaller than 200mm



Standard 5 fixings per board



Epsitec fixing pattern

1.0 INSULATION BOARD FIXING PATTERN

How Not To Do It

Completely incorrect

Too many fixings

Fixing insulation boards incorrectly can result in:

- The system being unstable and not securely fixed
- Boards not being fully supported behind the render, allowing the system to move on the wall
- Cracking from straight joints, gaps and unstable boards
- Air movement behind the system, where large gaps are left behind the insulation allowing air movement and affecting the thermal performance
- Invalidated Wetherby guarantee

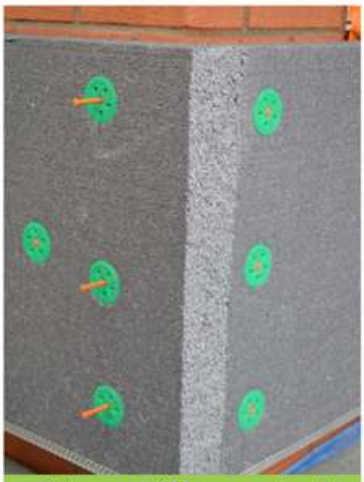
Fixing to board edges / corners incorrect

Fixings driven into insulation board

Straight joints at openings

1.1 FIXING INSULATION AROUND OPENINGS / CORNERS

'L' shape around openings

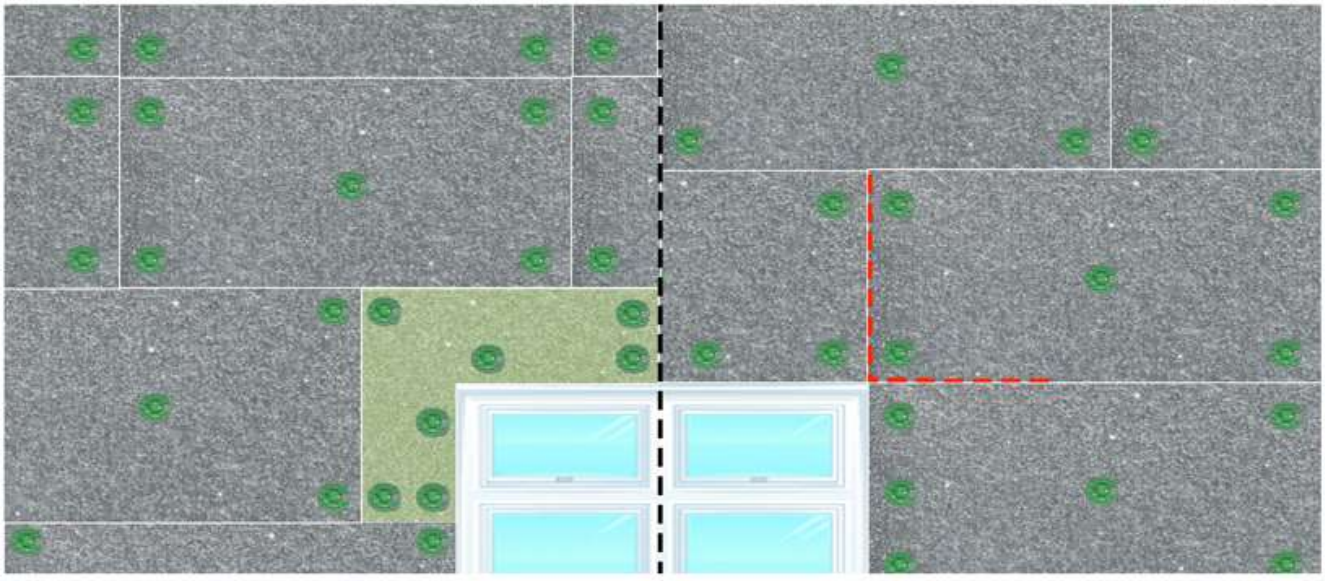


Fixings at 300 max. cts at corners and around openings

- No straight edges at window/door corners
- 'L' shape around all openings
- Fixings at max. 300cts at building corners and around all openings
- No board joints within 200mm of openings / corners
- Boards securely fixed back to substrate
- Gaps at openings / corners to be foam filled

Correct

Incorrect



1.1 FIXING INSULATION AROUND OPENINGS / CORNERS

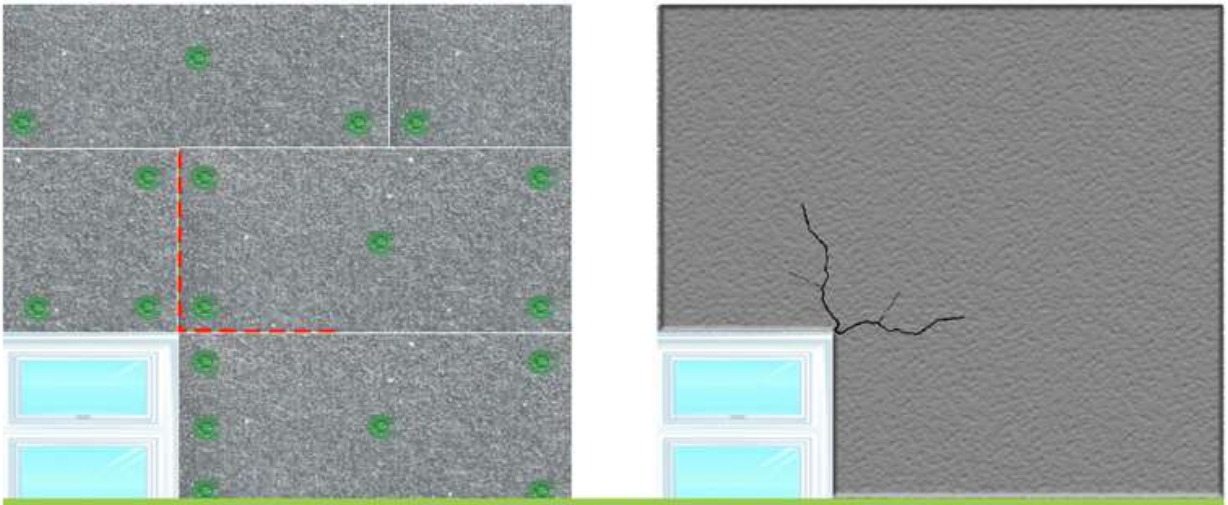
How Not To Do It

Straight joints at window corners leading to cracking in the render system

Fixing boards incorrectly around openings can result in:

- Cracks at straight joints through the render
- Unstable boards due to not being securely fixed
- Cracking between render and substrate/window
- Invalidated Wetherby guarantee

N.B. Openings receive higher wind loads and undergo the stresses and strains of windows/doors being opened and shut



Straight joints at window corners lead to cracking in the render system

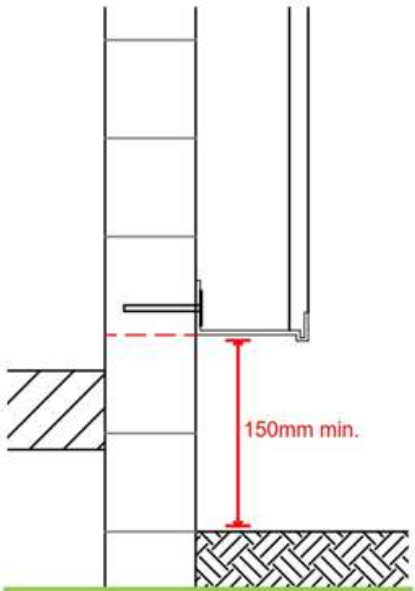
1.2 BASE BEAD DETAIL

Silicone/Acrylic base bead with clip

- Above DPC ensuring DPC is not bridged
- 150mm min. from ground to protect from water damage and staining
- Correct beading and finish
- Fixed at max. 300cts and 50mm from each end
- Minimise bell of render and finish flat to reduce risk of staining
- Maintenance of ground around DPC
- Below DPC should be insulated if a significant thermal bridge / cold spot is created

Spar Dash Finish Bellcast Bead

Brick Slip / Brick Effect Rail Starter Track



Starter Track installed above DPC and a minimum of 150mm above ground level

1.2 BASE BEAD DETAIL

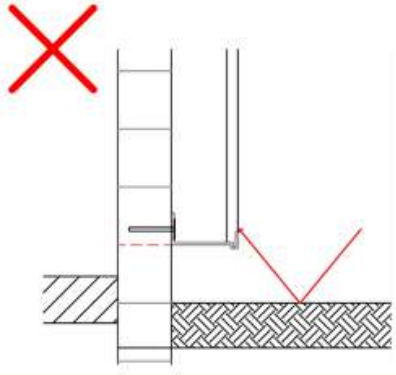
How Not To Do It

Render taken all the way to ground, starting to fail and suffering discolouration

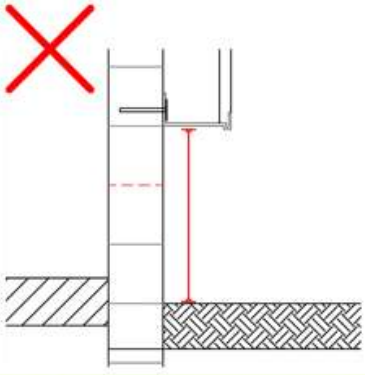
Ledge left on front of bead for water to sit on

Installing the system down to the ground, or installing a base bead incorrectly can result in:

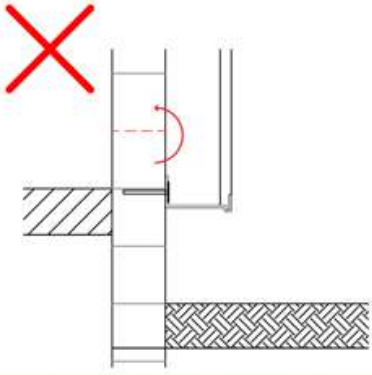
- Cracking at the junction between the ground and system, allowing water ingress
- Cracking between render and bead where incorrect bead used
- Constant soaking of the system from splash back, damaging the render through freeze/thaw
- Damaged render is likely to track up the building, as will damp in the system
- Bridging DPC may also allow rising damp to track around the structures DPC causing damp problems in the walls
- Staining is likely occur in a short timeframe where beads are installed less than 150mm from the ground
- Invalidated Wetherby guarantee



Base bead too close to ground - dirt, staining damage to render



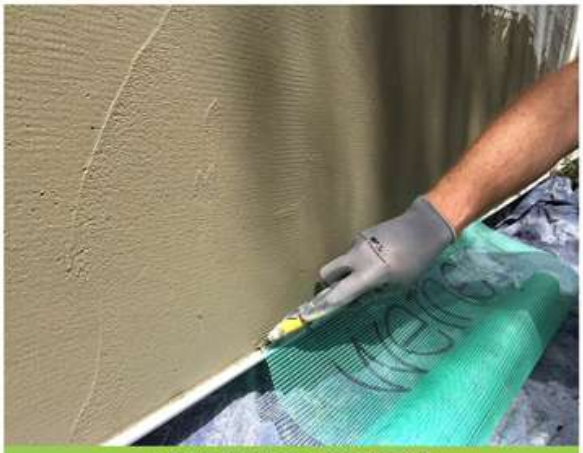
Large cold bridge created where base bead installed too high



DPC bridged allowing moisture to track around DPC

1.3 SCRIM PATCHES, LAPPING MESH & MESHING INTO BEADS

Scrim patch



Mesh lapped into bead

- Mesh must be overlapped by 75mm minimum and all beads must be fully meshed in to prevent cracking
- Mesh must be returned into all window heads / reveals which are stress areas on a render system
- 200mm x 200mm scrim patches must be installed at all opening corners
- 500mm x 200mm scrim patches advised for steel frame / timber frame / SIPS projects to combat the extra movement of a frame

200mm x 200mm minimum scrim patches installed at all opening corners

500mm x 200mm minimum scrim patches advised for steel frame / timber frame / SIPS

1.3 SCRIM PATCHES, LAPPING MESH & MESHING INTO BEADS

How Not To Do It

Crack due to scrim cloth not being overlapped

Beads not lapped by mesh causing cracking

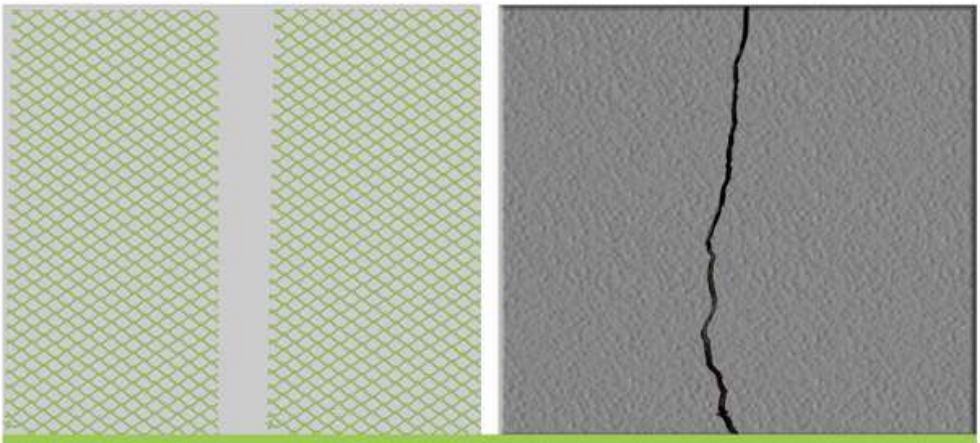
Not overlapping mesh or fully meshing into beads can result in:

- Increased risk of cracking at areas unprotected by mesh
- Large vertical/horizontal cracks
- Damage to render at junction with beads, allowing water ingress
- Invalidated Wetherby guarantee

Not installing scrim patches can result in:

- Increased risk of cracking at opening corners (often diagonal)
- Invalidated Wetherby guarantee

N.B. Mesh is designed as an anti-crack product to strengthen the render system



Where scrim cloth is not lapped, cracks may occur in the render system

Cracks caused by no scrim patches installed

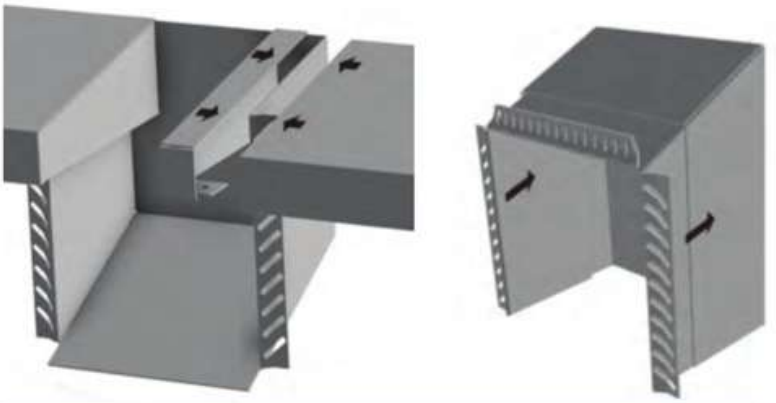
1.4 VERGE TRIM / PARAPET DETAILS

Verge Trim Detail

Parapet Detail

- Verge trims should be specified to suit the roofline of the building, preventing water ingress at this point is critical in preventing water ingress
- Sealing tape and WBS 25 year life expectency silicone sealant must be used to seal a verge trim or the EWI system against a parapet flashing
- Where the verge is exposed, WBS 781 or 791 trims are advised to improve protection against water ingress. Other options are available
- Jointing pieces must be used and sea;ed on place to prevent water ingress
- Downpipe recess boxes are advised to ensure a watertight neat detail for downpipes
- 40mm min. overhang crucial in protecting the system from damage and staining

781 Grind in Verge Trim



Downpipe Recess Box

791 Upstand Verge Trim

1.4 VERGE TRIM / PARAPET DETAILS

How Not To Do It

Verge trim not jointed or sealed

Verge not fully protecting system allowing water ingress

Gap in flashing at corner

Not detailing/installing parapet flashing and verge trims correctly can result in:

- Water ingress into the back of the system which will damage the render and insulation below
- Staining in lines from water flowing through failed flashing joints
- Staining from insufficient overhang as substrate is constantly soaked due to lack of protection
- Water ingress under flashings where the system is not finished and sealed correctly to flashing
- Invalidated Wetherby guarantee

Staining caused by insufficient overhang

1.5 WINDOW CILL DETAIL

Completed Overcill

New Cill with Correct Overhang

Completed Undercills

- All cills must be fully sealed
- Correct fall channeling water away from the render system
- Securely fixed ensuring no movement
- 40mm min. overhang
- Render and insulation sealed to underside of cill
- End caps strongly advised
- Jointing pieces also strongly advised on large cills / bay windows

Overcill

Undercill

1.5 WINDOW CILL DETAIL

How Not To Do It

System not protected or sealed

Cill too short causing staining and water ingress

Detailing and installing cills incorrectly can result in:

- Water ingress around cills which will damage the EWI system
- Water ingress from incorrect jointing (jointing pieces are recommended)
- Staining from water run off if cill not installed to provide a consistent fall
- Staining from insufficient overhang where the cill is not protecting the render below
- Invalidated Wetherby guarantee

Cill rendered into system and providing no overhang / protection

1.6 FLASHING / CILL OVERHANG INFORMATION

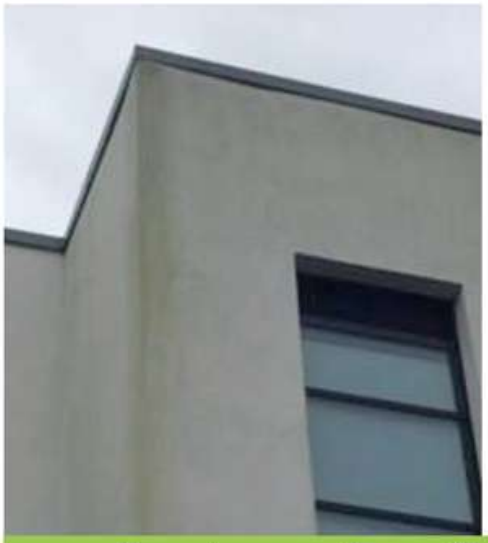
Verge trims and cills providing full protection and overhang

- Wetherby specify a minimum 40mm overhang in specifications and drawings to protect the render system
- Overhangs less than 40mm are likely to resultin staining to the render system.
- Water staining and algae are inevitable when water runs off the flashing or cill and down the face of the render.
- Keeping the render dry and protected will massively increase its aethetic lifespan
- Overhangs less than 20mm do not provide enough protection and may result in damage to the system finish.

Trims used to neatly overhang and protection for render system

1.6 FLASHING / CILL OVERHANG INFORMATION

How Not To Do It



No overhangs creating possible water ingress, water staining and algae growth

Trims and flashings not providing a 40mm overhang can result in:

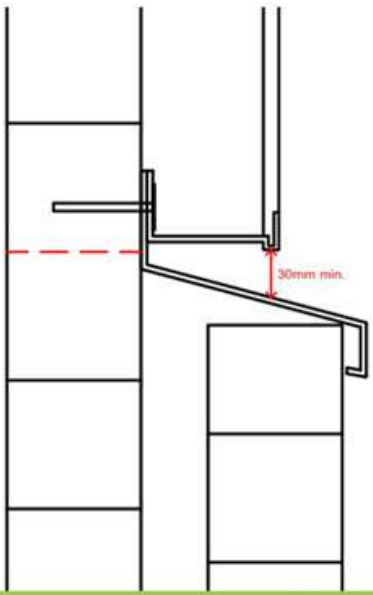
- Water staining of the render as dirt runs off creating streaks down the finish
- Algae staining from constantly soaked render which provides an ideal surface for algae growth (staining / algae issues are aesthetic only and are not covered by the Wetherby guarantee)
- Dirt / greenery collecting on roofs or flashing will constantly stain render with dirty water
- Overhangs less than 20mm may allow water ingress and damage the EWI system / render finish
- Invalidated Wetherby guarantee

No overhangs creating possible water ingress, water staining and algae growth

1.7 RENDERING ABOVE A FLASHING

Starter track installed above a flashing

- Rendering onto a flashing is a poor detail creating a weak point in the EWI system
- Any moisture is prevented from draining out of the base of the system
- The joint between render and flashing is likely to stain and fail in a short time frame leaving the bottom of the system at risk of water ingress and damage
- A starter track is always advised to ensure a durable and lasting detail
- A 30mm minimum gap should be left between fashing and front of starter track
- Flashings must always fall away from the EWI, ensuring moisture can not sit against the finish.



Starter track installed above a flashing

1.7 RENDERING ABOVE A FLASHING

How Not To Do It

EWI Systems insulated and rendered directly down onto a flashing

Rendering down onto a flashing can result in:

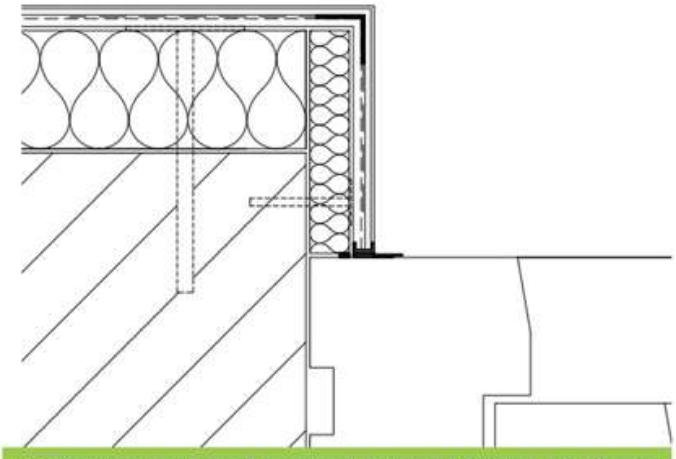
- Sealant failing between render and flashing
- Water soaking the render from sitting water or splash back
- Render damage, water ingress and failure above flashing
- Any moisture becoming trapped in the system due to no base track being used to allow drainage
- Staining to render from splash back/soaked render
- Invalidated Wetherby guarantee

1.8 WINDOW RETURN DETAIL / SILICONE SEALANT

Window return detail

APU bead

- The majority of system failures are a result of water ingress at either roofline or around opening
- Wetherby 25 year life expectency silicone sealant should always be used to ensure a long lasting seal
- The junction must be clean and suitable for silicone application to ensure adhesion
- Silicone sealant can be applied to either basecoat or the finished render when using a spar dash finish
- Failure to seal openings will inevitably lead to water ingress and failure of the EWI system
- APU beads are advised to ensure a long lasting seal



APU frame seal and sealing tape at frame abutment

1.8 WINDOW RETURN DETAIL / SILICONE SEALANT

How Not To Do It

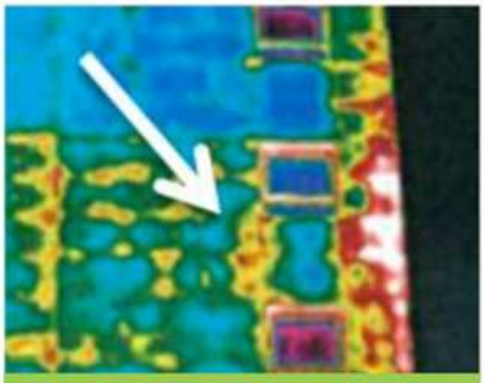
Render half way across window

Window rendered in preventing it from opening

Failure to install insulation/render to a reveal or window head correctly can result in:

- Sealant failing in a short time frame if poorly applied to render
- Water ingress at junction, causing damage to insulation/render
- Water ingress at cill junction causing damage to insulation/render
- It is an unsafe practice if windows are rendered in and are unable to be opened
- Invalidated Wetherby guarantee

Badly cut out system to allow window to open



Water ingress can be seen in red on the thermal image as wet insulation cannot perform

1.9 MOVEMENT JOINTS / SLIP JOINTS

Movement Joint

Slip Joint

- Movement joints must be installed to replicate any structural movement in the substrate, whether horizontal or vertical
- Changes in substrate will require movement joints where movement is expected
- Spar dash, brick effect render and mineral render finishes require movement joints every 7m in large unbroken elevations
- Movement of more than 5mm will require a slip joint profile which can be installed to accept up to 25mm of movement
- Failure to install movement joints will likely result in cracking of the render system, allowing water ingress and requiring repair

Mesh fully lapped into movement joint

Galvanised Steel Movement Bead

1.9 MOVEMENT JOINTS / SLIP JOINTS

How Not To Do It

Excessive substrate movement

Movement causing cracking where no movement joint installed

Failure to design and install the system to incorporate movement can result in:

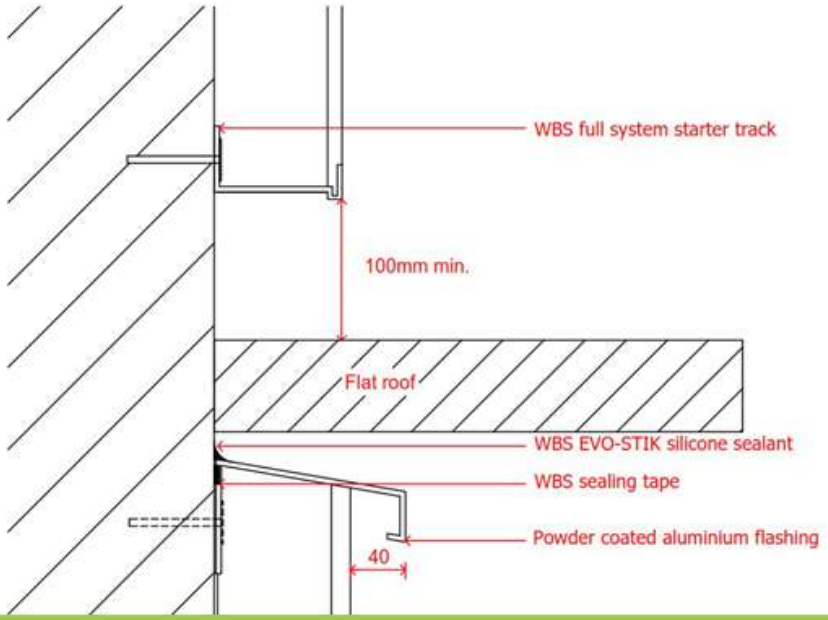
- Cracking in the render where no allowance for structural movement/change in substrate is made
- Splitting/popped movement joints from too much movement (slip joints incorporate more movement) allowing water ingress /system failure
- Water ingress from mastic being applied incorrectly to back to back stop beads
- Damage/cracking due to butted insulation not allowing for movement at structural movement joint
- Invalidated Wetherby guarantee

Movement Joint created with no beads and incomplete mastic allowing water ingress

1.10 CANOPY DETAIL

Canopy detail using a verge trim and stop bead to protect the system

- Canopies must be correctly detailed to prevent water ingress and staining
- Base beads should be set 100mm above pitched canopies and 150mm above flat canopies
- Products and solutions available to reduce cold bridging
- Stop beads and verge trims must be fully sealed and neatly jointed ensuring water run off
- Canopies must provide a fall away from the system



Canopy detail using a starter track, verge trim and stop bead to protect the system

1.10 CANOPY DETAIL

How Not To Do It

System finished on top of flat canopy with no protection to areas below

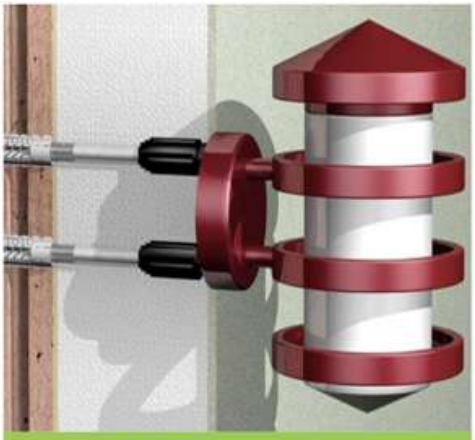
Canopy badly rendered around creating a ledge

Failure to install an EWI system around a canopy or conservatory correctly can result in:

- Damage to the render and water ingress where the system is sealed onto a canopy/conservatory
- Staining to render where brought down directly onto canopy/conservatory roof
- Water ingress at either side and below canopy where render is not adequately protected by stop beads/verge trim
- Damage to EWI system where no fall allows water to sit/pool against system
- Staining caused by canopy run off pushing water against and down the render system
- Invalidated Wetherby guarantee

Canopies and conservatories rendered into the system creating areas for water ingress

1.11 SYSTEM VENTS / FIXTURES AND FITTINGS / ADDITIONS



Extended EWI fixings

SWI-FIX space tube

Through wall vents

- Badly fitted fixtures and fittings damage and crush an EWI system allowing water ingress
- SWI-FIX spacers are advised for protecting and sealing
- Extended EWI fixings also available
- Additions should be installed to prevent water run off back onto the EWI system causing staining
- Through wall vents are advised to prevent water ingress
- Vents must not simply be sealed to the render face with insulation left unprotected behind

FID fixing

Thermax fixing

1.11 SYSTEM VENTS / FIXTURES AND FITTINGS / ADDITIONS

How Not To Do It

System exposed and damaged through fixing fixtures to wall incorrectly

Failure to install vents, fixtures and fittings correctly can result in:

- Water ingress through poorly sealed areas
- Damage to the EWI system due to crushing the insulation behind the render
- Cracking caused by movement from larger objects not properly and securely fixed
- Water staining/algae growth from water run off being channelled down the render face
- Invalidated Wetherby guarantee

Satellite dish installed completely incorrect

Vents not sealed resulting in water ingress

2.0 CONTACT DETAILS AND FURTHER INFORMATION

Wetherby Technical Department

For further technical information please contact our Technical department on:

Technical Helpline Tel: 08458 382380
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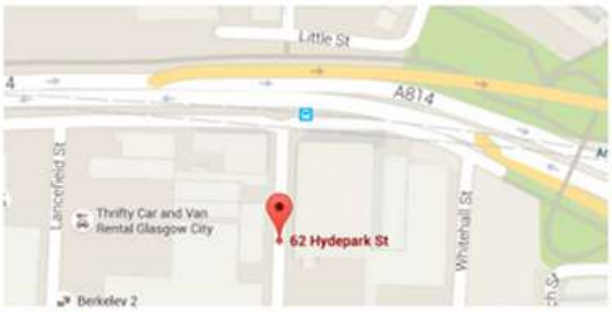

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CF32 9TD
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Main Tel: 01656 720422
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