IMPORTANT NOTICE

HITEX DIAMOND CAVITY PLASTER CLADDING SYSTEM

Hitex Diamond cavity plaster system (often called by its generic name EIFS) was manufactured between 2003 and 2010 by Hitex Building Systems Limited in response to the 'leaky building' crisis.

Hitex Diamond achieved a number of aims. The diamond cavity provided the first 2 'D's, Drainage and Drying, the undersill trays and detailing achieved better weathertightness the 3rd 'D' called Deflection and builders were requested to use decay resistant framing the 4th 'D' Durability.

During 2003-2005 cavity battens became included in Acceptable Solutions as one way of providing Drainage and Drying. Other detailing introduced better weathertightness and Standards clarified where fungicide treated framing should be used.

This notice is to provide a 'balanced' view. Some people have been obtaining building reports from inspectors and experts unfamiliar with the attributes of plaster claddings like Hitex Diamond Cavity System.

Statement: Hitex had no power over the treatment of the timber framing, or the quality of the many weathertightness detailing like roofs, gutters, soffits, windows, penetrations, garage door openings and finished ground lines. Likewise Hitex has no control over other systems that may also cause leaks like showers, wet areas, decks, plumbing and water pipes. Some buildings had more than one cladding. Hitex has no control over maintenance or alterations that may have been done since the cladding was installed.

Recommendation: It is our strongest recommendation that at a minimum owners, prospective purchasers, building inspectors and experts undertake what is termed 'invasive tests' before making comments on whether the building is 'leaking' or not. Invasive tests are the minimum inspection recommended because it provides the important 'Evidence' in making decisions:

- Whether the framing is adequately treated with an approved fungicide which excludes H1 and UTKD: Despite code changes we still found UTKD as late as 2010
- Are the weathertightness details working properly as if not framing could already be decayed and cause scan and Thermal misses
- Get moisture content readings in winter when rainfall is at peak to determine whether ALL the claddings, roof, gutters, windows and cladding(s) are functioning correctly.
- Has maintenance already been done and if so was the framing checked as it may already be decayed, but now dry because leaks have been fixed?

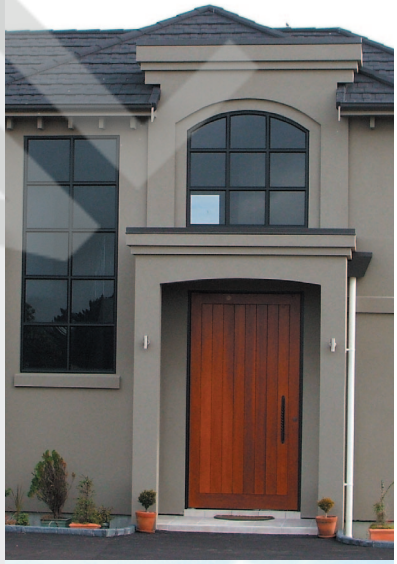
You cannot assume just because you have had someone inspect the building, or use a scanner or Thermal camera, even if they attest the inspections to have been done to NZS 4306:2005 that you are protected. This is a visual Standard although S4.2 does provide for special purpose reports including weathertightness reports but for some reason inspectors and experts do not invoke this requirement meaning the inspection falls well short of the Standard and protection you expect.

Invasive testing can be done in a way it does not damage the claddings.
Go to www. moisturedetection.co.nz

Hitex Diamond Cavity Cladding System

For a drier, warmer, healthier home with lower energy costs

Homes breathe easier, dry out faster and are better protected with the proven Hitex Diamond Cavity Cladding System.



Hitex. A proud history of success

Hitex Building Systems play a leading role within the building industry, specialising in the manufacture and installation of plastered products and services designed to comply with New Zealand building regulations and the four "D's": Deflection, Drainage, Drying and Durability. Hitex is the only New Zealand EIFS plaster cladding company offering builders and designers a one-stop manufacturing and installation service. Hitex installs, audits and oversees every project with trained tradespersons and supervisors ensuring your cladding is installed right first time.

Diamond Cavity Cladding System. Today's sustainable, cost-efficient solution

The unique Hitex Diamond Cavity System is the result of comprehensive research and development since 2002 and comprehensive testing by the University of Auckland. Hitex offer builders a reliable, proven solution for sustainability that's free from the worry of future weather tightness issues.

To create this innovative dry-wall cladding system, Hitex chose established materials that are recyclable, energy efficient and sustainable.

- Insulation: Polystyrene for exceptional energy efficiency
- Strength: Fibre-glass for reinforcing strength
- Plaster: for long term durability

The Hitex Diamond Cavity System's energy saving secret is that it performs like a virtual thermal blanket that's wrapped around all walls, yet still allows the home to breathe. The result is a warm and dry environment in winter, cool and comfortable in summer, saving on energy to heat and cool your home.

A unique and proven drying system

- Dry walls mean a healthier home that's easier to heat.
- The Hitex Diamond grooves space the body of the polystyrene off the wall, creating a gap for moisture to exit safely to the exterior. There are no battens to impede the flow.
- The building paper cannot be sucked into the polystyrene, so the diffusion process can continue at all times.
- No additional insulation is required - in fact Hitex exceeds the code requirements.
- The science behind the cavity grooves allow drying to occur even at night.

Hitex Diamond Cavity Cladding System




How it works

Extensive research and the resulting science is used to keep your home drier, warmer and healthier with lower energy costs. Excess moisture in the timber framing evaporates into the stud space and becomes gaseous molecules suspended in the air. These molecules move through the building paper and are transported safely to the outside by the Diamond Cavity grooves. Extensive drying tests by the University of Auckland confirm that the Hitex Diamond Cavity System can dry out a wet bottom plate in just 10 days, providing the leak has been fixed. No more building delays because the builder can proceed with the job confident that the bottom plate can dry out, even during winter.

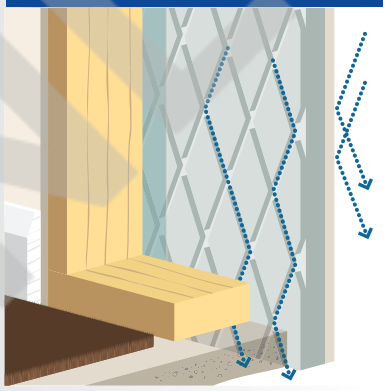
Hitex 25 Year Home Care Warranty

We're so confident about the long term effectiveness and durability of the Hitex Diamond Cavity System that we offer a 25-year warranty* covering all materials and workmanship.
*Terms and conditions apply

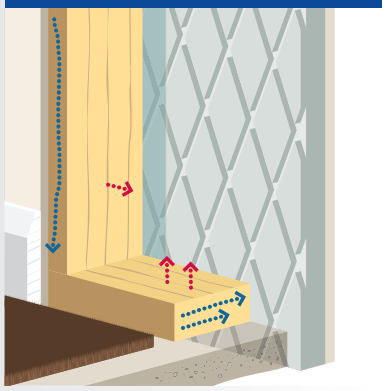
Peace of mind for the life of the home

Hitex recommends the innovative Mdu PROBE System, which protects against hidden problems inside the walls. Easily installed within the wall cavity, even after construction, to provide all the information required to make accurate "snap-shots" in preparation for maintenance. Now that's useful.

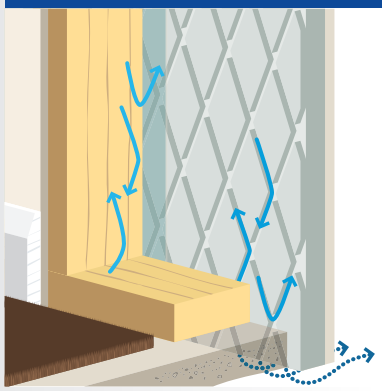
DEFLECTION & DRAINAGE



EVAPORATION



VENTING



Innovation and service excellence in the construction industry.

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CLADDING | ARCHITECTURAL MOULDINGS & COLUMNS | FENCING

Hitex Diamond EIFS Cladding

Document title: **HITEX Diamond and NZ Building Code E2 External Moisture**

May 2007

(Refer to E2/AS1 when reading this document for paragraph, tables and drawing references).

9.0 Wall Claddings
9.9 EIFS

Hitex Diamond Cladding is an Exterior Insulation and Finish System (EIFS) cladding. Hitex Diamond shall be **direct fixed** to *framing* over a *building wrap*.
Based on the building envelope risk matrix to determine *risk scores* to assess weathertightness, calculated as per Paragraph 3.1 and Tables 1 & 2, and in consideration of the EIFS limitations in Paragraph 9.9.1,

Hitex Diamond Cladding is an **Acceptable Solution** for Risk scores 0 - 6 when direct fixed to framing and for Risk scores 7 – 20 when fixed over a 20 mm drained cavity formed with a batten.

Hitex Diamond Cladding when direct fixed to timber framing for Risk scores of 7 – 20 is an **Alternative Solution**. The diamond grooves on the polystyrene face on the back of the EIFS cladding are an alternative means to achieve drainage and drying.

COMMENT:
Hitex Diamond has interconnecting grooves 15 mm wide and 10 mm deep in a diamond pattern at 58 mm centres on the back face of the EIFS polystyrene sheet to achieve 50% free drainage area. Hitex Diamond is designed with an alternative cavity system as an integral part of the EIFS cladding. Hitex Diamond has been shown in tests and in monitored houses to meet the requirements of a ***drained cavity*** and for ***drying*** within the meaning of E2/AS1 dated 1 February 2005 Third Edition definitions. A "***Drained Cavity***" assists drying by allowing water which occasionally penetrates the wall *cladding system* to drain to the exterior of the *building*, and any remaining moisture to dry by evaporation. The Hitex Diamond integral cavity drying test results demonstrate it satisfies the comments under Paragraph 3 "Weathertightness Risk Factors" showing serious problems are more commonly associated with *claddings* that have limited drying capacity once water penetrates from a leak.

9.9.1 Limitations

This Appraisal is limited to Hitex Diamond *Cladding systems* that are:
a) Designed and tested as a total system, and
b) Not fixed:
   i) So as to form a horizontal surface, or
   ii) As a replacement for roofing, or
   iii) In such a way as to allow water to pond, or
   iv) Where there is no air barrier by way of internal linings.

9.9.2 General

Installation and finishing of Hitex Diamond *Cladding systems* are by trained applicators, approved by Hitex Building Systems Ltd. (Hitex) Such a training course is Hitex Trade Practises and/or BCITO as described immediately below in comment.

COMMENT:
It is recommended that an installer has successfully completed or demonstrated skill to the appropriate level of training for the task being completed of an NZQA recognised course. The BCITO National Certificate in Proprietary Plaster Cladding Systems - EIFS is such a course.

9.9.3 Materials

The Hitex Diamond comprises the following parts:
a) A polystyrene sheet *cladding* material,
b) A polymer modified cement-based plaster reinforced with fibreglass mesh,
c) A polymer based finishing plaster and/or a polymer-modified cement based finishing plaster and a latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730,
d) A range of head, sill, jamb, corner and base mouldings suitable for exterior use, and
e) A flexible polymeric neutral cure sealant that:
   i) is approved by Hitex, and
   ii) complies with Type F, Class 25LM of ISO 11600.
f) Fixings, glues and adhesives

COMMENT:
This is the minimum standard, and extra elements deemed suitable by Hitex should not be excluded on the basis of this Specification.

9.9.3.1 Polystyrene sheet

Expanded polystyrene (EPS) sheet of a minimum thickness of 50mm complying with
AS 1366: Part 3, Class H or Class S

9.9.3.2 Fibreglass reinforcing mesh

Fibreglass reinforcing mesh is alkali-resistant fibreglass mesh, and:
a) Weighs no less than 160 grams per m2,
b) Has a 4 mm x 4 mm square aperture size, and
c) Complies with the requirements of EIMA 101.9 test No. 6.3 and ASTM E2098.

9.9.4 Installation

The *building wrap*, as specified in Table 23, is fixed to the *framing.*

9.9.4.1 Fixings

Polystyrene sheets and *building wrap* shall be fixed to the wall *framing* as required in Table 24. Fixings:
a) Are spaced as shown in Table 24 or as per BRANZ test STO527 for very high wind zones.
b) Penetrate the framing by 30 mm minimum,
c) Comply with AS/NZS 4680, and
c) Are hot-dipped galvanized flat head nails used in conjunction with a 18mm galvanised washer (or a 22 mm minimum diameter plastic washer)

9.9.4.1 Fixings

See HITEX DC50-FA-06 ver 2

SPACINGS FASTENER LOCATION

9.9.4.2 Joints

Joints to plain-edged sheets are fixed vertically over solid timber backing. Rebated or tongued sheets are butt jointed using Hitex ready studs where they are joined away from solid timber backing ensuring the joint becomes self-supporting at both edges. During drainage tests butt jointing did not impede drainage due to the spacing of the diamond cut-outs.
The Hitex Diamond EIFS cladding sheet edges shall be butted together and supported at no more than 300mm centres along the length of the joint.

See HITEX DC50-WA-01 ver 2
HORIZONTAL JOINS PANEL JOIN NO STUD

Intersection with other claddings

All Hitex Diamond EIFS joints to other claddings shall be done in such a way so as to accommodate deflection and drainage principles for each cladding type and for each trade to ensure that both claddings will continue to be weather tight.

Hitex to Weatherboard Joint

See HITEX DC50-CA-04 ver 2
CLADDING INTERSECTIONS
WEATHERBOARD VERTICAL JOINT

See HITEX DC50-CA-03 ver 2
CLADDING INTERSECTIONS. INTERNAL CORNER WEATHERBOARD HITEX ABUTMENT

Hitex to Brick Joint
See HITEX DC50-CA-05 ver 2
CLADDING INTERSECTIONS BRICK ABUTMENT. INTERNAL CORNER

See HITEX DC50-CA-06 ver 2
CLADDING INTERSECTIONS BRICK ABUTMENT. EXTERNAL CORNER

See HITEX DC50-CA-07 ver 2
CLADDING INTERSECTIONS BRICK ABUTMENT. HORIZONTAL

Fixing spacers

Fixing Spacers shall be rigid tube aluminium measuring 5mm longer than the Hitex Diamond EIFS cladding thickness. Fasteners shall be into solid framing and be sealed accordingly. Fixing spacers shall not crush the Hitex Diamond EIFS cladding.

Hitex Spacer Fixing Mounting Bracket
See HITEX DC50-FA-01 ver 2
HITEX-DC50 MOUNTING BLOCK - NOG

Corners

Corners may be staggered or inline and shall be fully meshed with the mesh extending a minimum of 100mm each side past the cut edge of the sheets. External corners must be reinforced with PVC corners fitted beneath the mesh.

Hitex Corner Details
See HITEX DC50-WA-07 ver 2
INTERNAL CORNER

See HITEX DC50-WA-08 ver 2
EXTERNAL CORNER 135 DEGREE (OR OTHER ANGLE)

See HITEX DC50-WA-09 ver 2
EXTERNAL CORNER RIGHT ANGLE

9.9.4.3 Movement control joints

Control joints shall always have the lower sheet located over solid timber backing. *Control joints* are as shown in Figure 124, and are provided:

a) On all walls over 6 metres high,
b) At each mid floor timber structure or buildings over one storey high
c) At abutments to different *cladding* types,
d) Where Hitex Diamond covers different structural materials such as timber to concrete and continues over 300mm past the joint
d) Over a movement *control joint* in the underlying framing in the form of planned seismic connections
e) At minor strips above and below large openings on long walls.

Hitex Mid Floor Control Joint E2:124
See HITEX DC50-WA-05 ver 2
HORIZONTAL CONTROL JOINT

COMMENT:
Hitex Diamond does not require horizontal Control Joints other than within the above parameters. Seismic control joints must allow complete suspension of each side of the cladding. Vertical control joints shall be provided in stress areas where small strips join larger wall areas (in particular around windows). This can be done by "V" joints or in some situations butterfly reinforcing may be used.

9.9.4.4 Fixing blocks

H3.2 treated timber blocks may be provided at appropriate locations for fixing down pipe brackets, garden taps, and other outside fittings. The blocks shall be cut to suit the polystyrene thickness, with each block having a maximum size of 200 x 100mm and fixed to *framing*. In the event that a cavity batten is used, then the block would be fixed to the cavity batten. Prior to applying the plaster basecoat, a patch shall be applied that:

a) Extends over the timber block face and overlaps the adjacent polystyrene by a minimum of 50 mm, and
b) Is suitable for the direct application of the base coat, and is either:
(i) a butyl-based *flexible flashing tape* that complies with Parts 3.2 and 4 of ICBO Acceptance Criteria AC148, or
(ii) a *waterproofing membrane* that complies with the requirements of AS/NZS 4858 Table 8, Parts
(a) to (e), except that bleach and detergent immersion set out in Appendix A1 shall not be required, or

The design of fixing blocks for connecting items carrying substantial loads such as stringers for *decks* are outside the scope of this Specification and will require specific structure and *specific weathertightness design*. See paragraph 9.9.11.2

COMMENT:
A number of Specific Weathertightness Designs (SWD's) are located within Hitex Specifications. Designers are directed to these in the first instance, and where no suitable design is available, then to consult with Hitex Building Systems to establish suitable or alternative methods.

9.9.5 Insulation

The Hitex Diamond EIFS Cladding System must be continuous over the wall framing to maintain the insulation required by NZBC H1.

(i) If necessary in order to meet the thermal resistance requirements of NZBC H1:

a) The polystyrene thickness shall be increased
b) Additional insulation as directed by Hitex Building Systems Ltd may be required where (a) cannot be accomplished.

(ii) The following table represents Hitex insulation figures

40mm face fixed	R1.5 Zone 1, 2
50mm Diamond Cavity	R1.69 Zone 1, 2
60mm Diamond Cavity	R1.9 Zone 3

Zones 1-3 as referred to NZS4218

9.9.5.1 Battens

Where a *drained cavity* is required, the Hitex Diamond *integral cavity* Cladding System shall be used as an **Alternative Solution.**

COMMENT:
Hitex Diamond Cavity cladding does not require the use of battens to create a *drained cavity* since the cavity (grooves on polystyrene face) is integral in its product. The supporting information is contained within Hitex Building Systems Ltd *Producer Statement*.

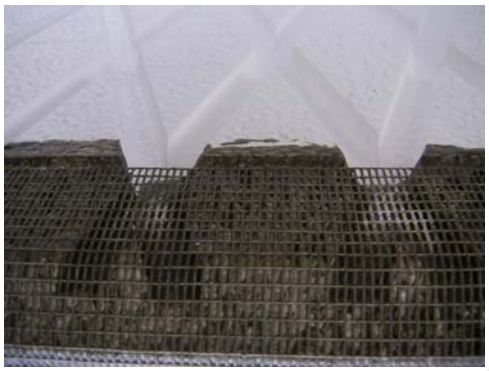


Photo of Hitex Diamond cavity drainage grooves and the baseline anti vermin mesh (Figure 66).

9.9.6 Coating

The supplier of Hitex Diamond has demonstrated that their systems meet the tensile-adhesion performance requirements of ASTM E2134.

9.9.6.1 Reinforcing

The entire surface of the polystyrene sheet (including corners) must be continuously reinforced with alkali-resistant fibreglass reinforcing mesh as specified in Paragraph 9.9.3.2.

9.9.6.2 Reinforcing base coat

The reinforcing base coat shall have:

a) A base coat plaster of a minimum recommended thickness of 3 mm and be polymer-modified cement-based, and
b) Reinforced at joints and corners with an alkali-resistant fibreglass mesh (Paragraph 9.9.3.2), and have a
c) Cover to mesh by at least 1.5 mm plaster.

Polymer-modified cement-based plaster is only applied out of direct sunlight and when the temperature is between 5°C and 30°C, with the expectation that the temperature will be in that range for the following 24 hours.

9.9.6.3 Finish coats

The finish shall comprise either:

a) One or more coats of polymer-modified cement-based plaster and to be painted or
b) A pre-coloured polymer-based plaster.

Where necessary to maintain *weathertightness* and where specifications require, the Hitex Diamond shall be painted with a latex exterior paint system complying with any of Parts 7, 8, 9 or 10 of AS 3730.

9.9.6.4 Decorative mouldings

Decorative mouldings are formed from polystyrene, and shall be glued or mechanically fastened to ensure they remain securely fastened to Hitex Diamond EIFS cladding or *framing.*

Where decorative mouldings are attached, the reinforcing basecoat is applied to the wall before installation of the moulding. Where the moulding is intended to perform the function of the Hitex Diamond it must be constructed to the same minimum standard as the cladding so described in this specification.

9.9.7 EIFS/floor slab junction

The bottom of the Hitex Diamond EIFS cladding shall be as shown in Figure E2-125 and clearances as per Table 1 on page 4 of this Hitex E2 document.

COMMENT:
6mm offset of framing to foundation is not required for the Hitex Diamond EIFS system.

Hitex Table 1 Ground Clearances	E2:65 Table 18
Minimum ground clearances from bottom of Hitex Diamond cladding*	
	mm
Wet Ground	175
Free Draining ground	150
Concrete/Pavers	100
Roof Apron Flashings	35
Free Draining Tiles	35
Allowance from Butynol (before tiling)	50

* Areas below minimum clearances or clearances for other surfaces can be monitored in situ with moisture detection unit (Mdu) probes to determine if the timber framing moisture content is in compliance with NZBC

Hitex Floor Slab Junction *See* HITEX DC50-BL-01 ver 2 SLAB ON GRADE	E2:125

Hitex Wooden Floor Junction *See* HITEX DC50-BL-02 ver 2 PILE SUB-FLOOR

9.9.8 Pipes and service penetrations

All pipes and service penetrations through the Hitex Diamond shall be made weatherproof as shown in figure 126, by either:

a) A flange penetrating the Hitex Diamond cladding as a sleeve and sealed into the Hitex Diamond as shown in Figure 126, or
b) A face-fitted flange at Hitex Diamond surface and sealed with a neutral cure sealant that complies with the same requirements as Paragraph 9.9.3 (e) ii).

COMMENT:
Pipe penetrations are installed to slope down outwards towards the Hitex Diamond EIFS cladding exterior.

Where cables penetrate the Hitex Diamond cladding, a sleeve or conduit shall be provided and sealed into the cladding system. All wires that pass through conduit shall be sealed into position inside the conduit. Refer Figure E2:126.

Hitex Penetration *See* HITEX DC50-PEN-02 ver 2 PIPE PENETRATION	E2:126

9.9.9 Windows and doors

All windows and doors shall be installed in accordance with Paragraph 9.1.10, E2- Figure 127 (direct fixed windows) and comply with the requirements of NZS 4211. Reveals shall comply with NZS 3602. Flashings shall comply with Paragraph 4.0. All Windows shall include head, jamb and sill flashings including under sill trays formed with upstands on either end as per paragraph 9.9.4.1. Particular attention must be applied to corner and facetted windows to ensure flashings and under sill trays are weather tight.

Eyebrows as shown in photo above assist the deflection of water away from head flashings and windows. Consideration should be given to the use of eyebrows in high wind zone areas and walls with parapets.

Under Sill Trays

Under Sill tray flashings shall be in accordance with Table 7. Under Sill Trays shall extend back past the condensation channel of the window. A 5mm gap between the window and under sill tray is not to be sealed or if it is there shall be a minimum of 2x50 mm slots where it is not sealed spaced no closer than 50mm from the window corners. The Under Sill Trays must be colour coated metal, have turned up ends and not be punctured. Membrane tapes should only be used to construct weather tight corners in conjunction with under sill trays.
Installation Assembly details for Hitex Under Sill Trays.

Hitex Under sill Tray Procedure *See* HITEX DC50-WI-01 ver 2 WINDOW INSTALLATION DETAIL *See* HITEX DC50-WI-02 ver 2 UNDERSILL TRAY ASSEMBLY	E2:127

COMMENT:
Membrane tapes can be excluded from installations where under sill trays create fully weather tight corners.

Back sealing

Only windows within a wind zone category 'very high' shall be required to be back sealed. Back sealing is to be done with a semi rigid pre-sized foam backing rod. Expanding glues are expressly excluded.

Doors, Ranch sliders and French doors

All doors shall include head and jamb flashings with sills to be set 20mm into the floor. A formed under sill tray with upstands on either end shall be provided. For 'high' and 'very high' wind zones, a packer that allows drainage shall be applied behind the door sill flange to prevent water splash and air entry.

Hitex Door Sill Detail	E2:62
See HITEX DC50-DO-01 ver 2 DOOR OPENING. WOODEN FLOORS *See* HITEX DC50-DO-02 ver 2 DOOR OPENING. CONCRETE FLOORS	

Garage Doors

Garage spaces within, or attached to, the building envelope shall have: (as per E2-Figure 65 and table 18)

a) Openings provided with a 50mm minimum total height variation between the interior and exterior paving, and

b) Provision to drain water away from the threshold of the opening

c) Jamb and Head flashings.

Hitex Garage Opening Detail
See HITEX DC50-DO-03 ver 2 GARAGE HEAD *See* HITEX DC50-DO-04 ver 2 GARAGE JAMB

Photo depicts formed concrete at garage door to provide minimum 50mm level change (centre) and 50mm ground clearance below Hitex Diamond EIFS Cladding (left).

9.9.10 Parapets

Parapets shall comply with Paragraph 6.0. *Enclosed balustrades* shall comply with Paragraph 7.4.

9.9.10.1 Metal capping

Metal *capping* shall comply with the requirements of Paragraph 6.4, and are as shown in Figure 130. Where a *parapet* or an *enclosed balustrade* meets Hitex Diamond EIFS cladding, a *saddle flashing* is used, as shown in Figure 129.

Hitex Saddle Flashing	E2:12
See HITEX DC50-PA-02 ver 2 PARAPET TERMINATION TO WALLS	

9.9.10.2 EIFS exposed balustrades

Where the tops to *exposed balustrades* are formed using other than metal caps they are required to be Specific Weathertight Designs (SWD). and as such require approval as Alternative Solutions within the Building Consent process. It is recommended that Early Warning Detection System (EWDS) Mdu moisture probes be installed to establish performance requirements of the NZBC are met and continue to be met throughout the life of the building.

Any *membrane* other than metal shall be fully protected by the coating, and:

a) Comply with the requirements of AS/NZS 4858 Table 8, Parts (a) to (e), except that bleach and detergent immersion set out in Appendix A1 is not required, and
b) Be applied by a trained applicator, approved by Hitex.

COMMENT:
Plaster capped balustrades require specific weathertightness design and maintenance. Designers requiring these should consult Hitex before specifying

Hitex Parapet
See HITEX DC50-PA-01 ver 2
PARAPET

OTHER WEATHERTIGHTNESS DETAILS with relevance to E2

Deck attached through Hitex Diamond EIFS cladding

Decks attached through Hitex Diamond are specific weathertightness designs (SWD) and as such require approval as Alternative Solutions within the Building Consent process. It is recommended that Early Warning Detection System (EWDS) Mdu moisture probes be installed to establish performance requirements of the NZBC are met and continue to be met throughout the life of the building.
Weathertightness can be achieved through the use of stop ends and kick outs ensuring the decking membrane is capable of continued ongoing maintenance and service.

2. Stringer mounted Pergola and Deck

No timber shall protrude through the face of the Hitex Diamond EIFS cladding system. Stringers may be attached to framing with sufficient clearance (minimum 20mm) to maintain any movement at the fixing points. It is recommended to construct extended soffits above any fixing to reduce rainfall loading and to install an EWDS to ensure ongoing compliance with NZBC.

Hitex Stringer Mounting Bracket
See HITEX DC50-FA-03 ver 2
PERGOLA MOUNTING PLATE

See HITEX DC50-FA-04 ver 2
PERGOLA MOUNTING PLATE ALTERNATIVE

See HITEX DC50-FA-05 ver 2
HOT DIPPED GALVANISED STRINGER HANGER BRACKET

3. Hitex Diamond EIFS cladding to roof, soffit and fascia connections

Hitex Diamond soffit and fascia

It is highly recommended to install soffits (even as small as 50mm) to reduce the potential for water loadings on walls. Hitex Diamond joints must be completed behind all fascias to ensure the joints are water tight.

Hitex Soffit Detail	E2: 25, 36, 45

See HITEX DC50-WA-12 ver 2
NO EAVES DETAIL

See HITEX DC50-WA-13 ver 2
EAVES/SOFFIT

See HITEX DC50-WA-14 ver 2
SOFFIT WITH DRIP EDGE

See HITEX DC50-WA-15 ver 2
NEGATIVE SLOPING SOFFIT

Hitex Diamond EIFS and roof apron flashings

The roof must be flashed at all boundaries, ensuring all flashing and gutter discharges beyond the Hitex Cladding, using the details shown in figures 34 to 37.

Metal flashings shall comply with Paragraph 4.3 and Table 7, unless specifically shown otherwise in the details.

COMMENT:
Use purpose-made pre-folded flashings supplied by the roofing manufacturer where available and installed by a Licensed roofing or flashing applicator.

Hitex Apron Flashings	E2:7
See HITEX DC50-RO-01 ver 2 ROOF FLASHING *See* HITEX DC50-RO-02 ver 2 APRON FLASHING	

Hitex Diamond EIFS and roof Stop ends

All roof to wall terminations (and abutments) must incorporate a stop end that flashes the intersection where roofs and fascias meet the Hitex Diamond EIFS cladding.

Metal flashings shall comply with Paragraph 4.3 and Table 7, unless specifically shown otherwise in the details.

COMMENT:
Use purpose-made pre-folded flashings supplied by the roofing manufacturer where available

Hitex Roof Stop Ends	E2:18
See Hitex Roof Stop Ends	

Chimney capping
Chimney details require Specific Weathertightness Designs and shall allow a minimum slope and be air sealed to prevent wind blown moisture entry. All cappings shall lap no less than 50mm.

Hitex Chimney Capping Detail	E2:31
See HITEX DC50-PA-04 ver 2 CHIMNEY CAP DETAILS *See* HITEX DC50-PA-05 ver 2 CHIMNEY CAP DETAILS	

INSPECTIONS

The following minimum inspection shall be carried out for each installation of Hitex Diamond EIFS cladding:

(i) *Timber Frame and Ready to Start* pre-installation. Inspection to include the building wrap .

(ii) *Fixing release* inspection to cover correct assembly, joining and fixing of sheets around penetrations, flashings and SWD's.

(iii) *Final release* inspection to cover correct plaster and finish application.

(iv) *Advice of Completion of Building Works* to act as notification that the Hitex Diamond installation has been reviewed by Hitex.

WARRANTY

All Hitex Diamond EIFS cladding installations with duly completed "*Advice of Completion of Building Works*" shall be issued with Warranties by Hitex with any inclusions or exclusions duly noted.

MAINTENANCE

All Hitex Diamond EIFS cladding Warranty documents shall include prescribed maintenance needed for the Hitex Diamond to continue to meet the requirements of the NZBC.

It is an additional requirement that all Hitex Diamond specifications with a risk matrix greater than 14 require an EWDS monitoring system to be installed.

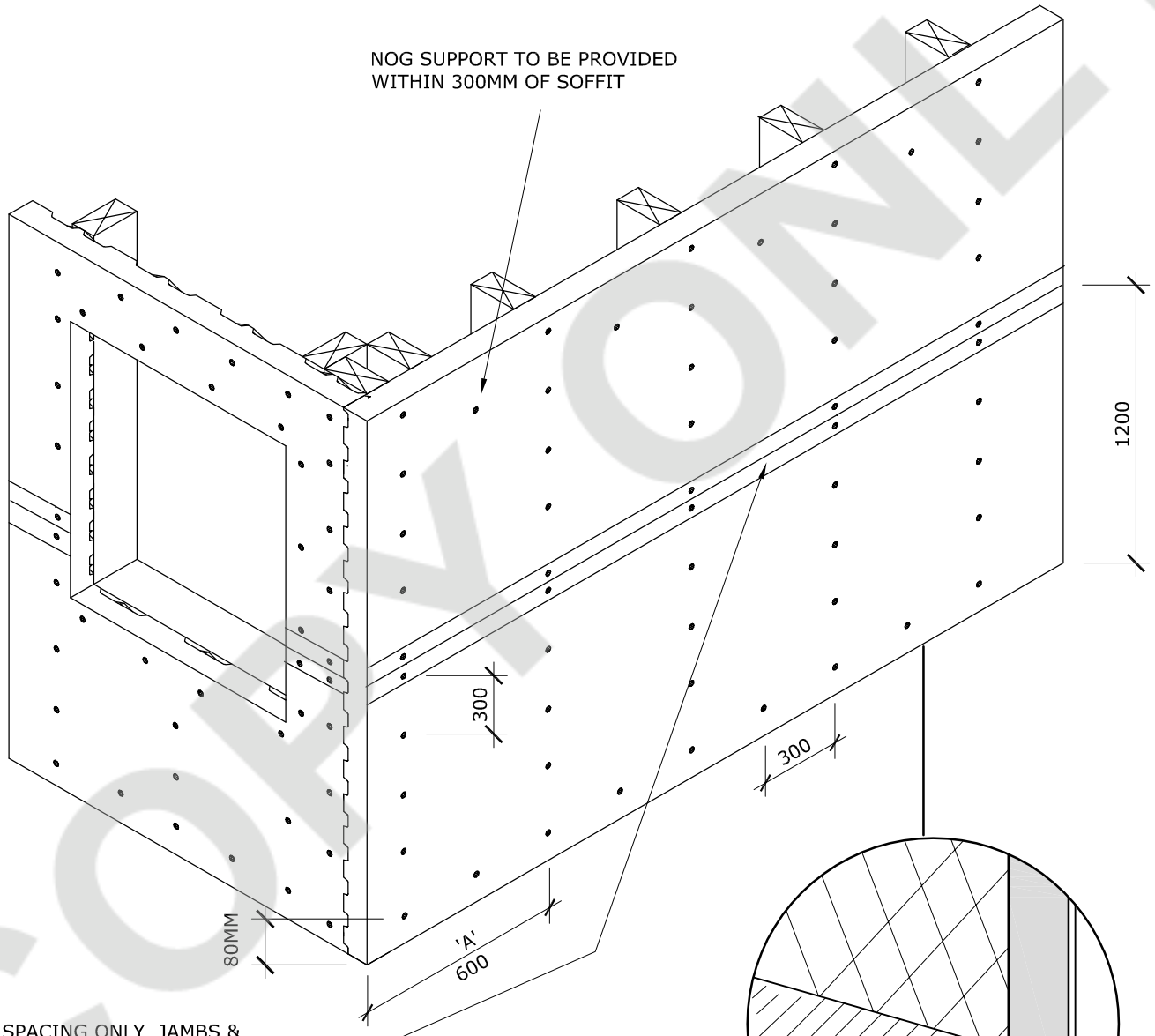
Hitex operates a prescribed maintenance program. Any issues are to be communicated to Hitex according to this programme and procedures.

RECORDS

Hitex shall keep a hard copy of its inspection process, materials used, applicator, SWD details approved and any other relevant information deemed appropriate.

USE 90MM HOT DIPPED GALVANISED NAILS WITH Z275 GALVANIZED CUPPED WASHERS. ALTERNATLVELY USE 75MM CLASS 3 SELF TAPPING SCREWS WITH Z275 GALVANISED CUPPED WASHERS

FOR VERY HIGH WIND ZONES 'A' REQUIRE A DOUBLE UP OF NAILING WITHIN 600MM OF ALL EXTERNAL CORNERS



*NAIL SPACING ONLY. JAMBS & SILLS NOT SHOWN.

*SHEET JOINT AND TAPERS. STUD SPACING GREATER THAN 350MM USE HITEX READY STUD

*APPLIES TO SEA SPRAY ZONES

HITEX PROPRIETARY FACTORY APPLIED VERMIN PROOF BACK WRAP

*FASTENER AND WASHER TO BE SET JUST BELOW OUTER SURFACE OF SHEET

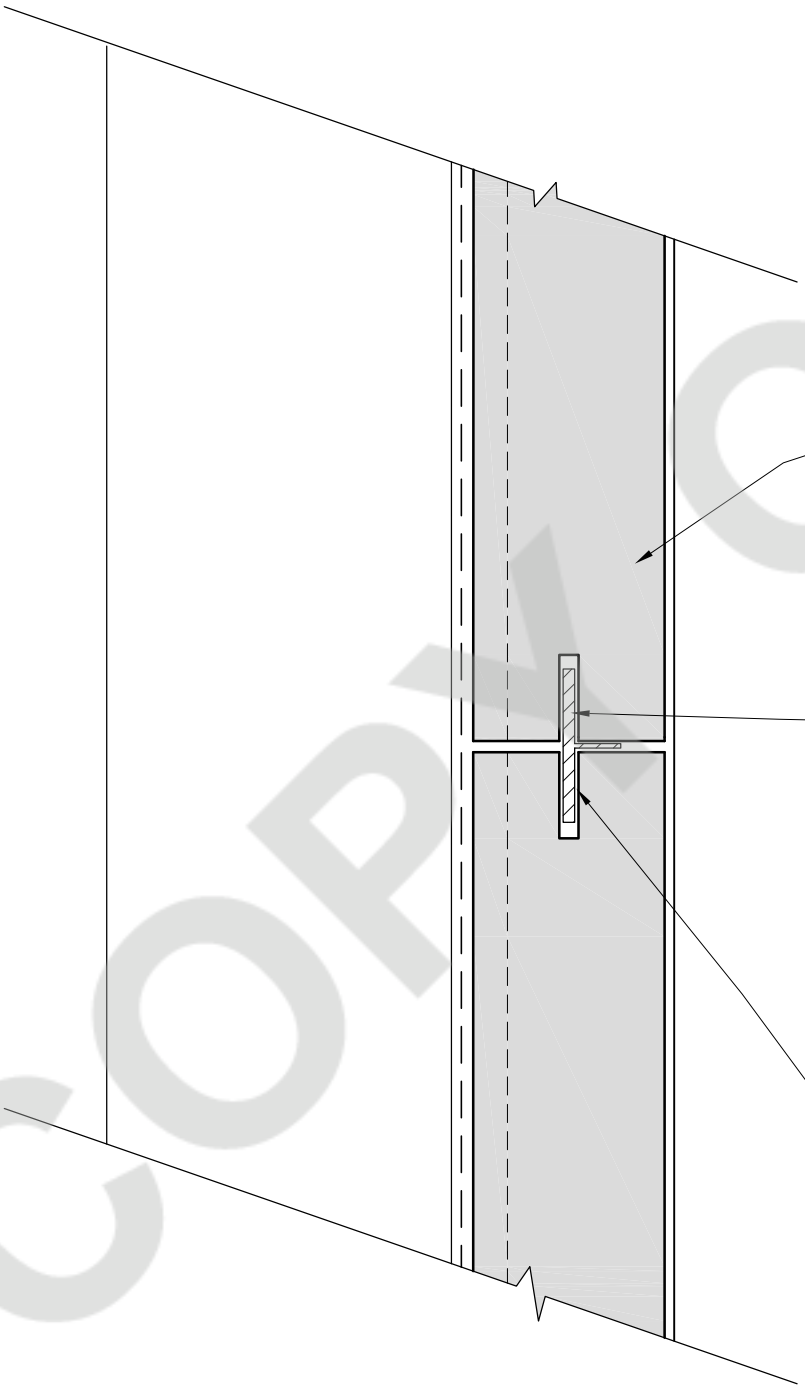
Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

FASTENER SPACING LOCATION

Not to Scale

DC50-FA-06 Ver 2



HITEX 50mm DIAMOND CAVITY OVER BREATHABLE BUILDING PAPER OVER H1.2 TREATED TIMBER STRICTLY TO MANUFACTURERS SPECIFICATION

OPTION: SCREWS CAN BE USED TO FASTEN SHEETS TO READYSTUD OVER LARGE SPANS.

METAL OR PVC HITEX READYSTUD

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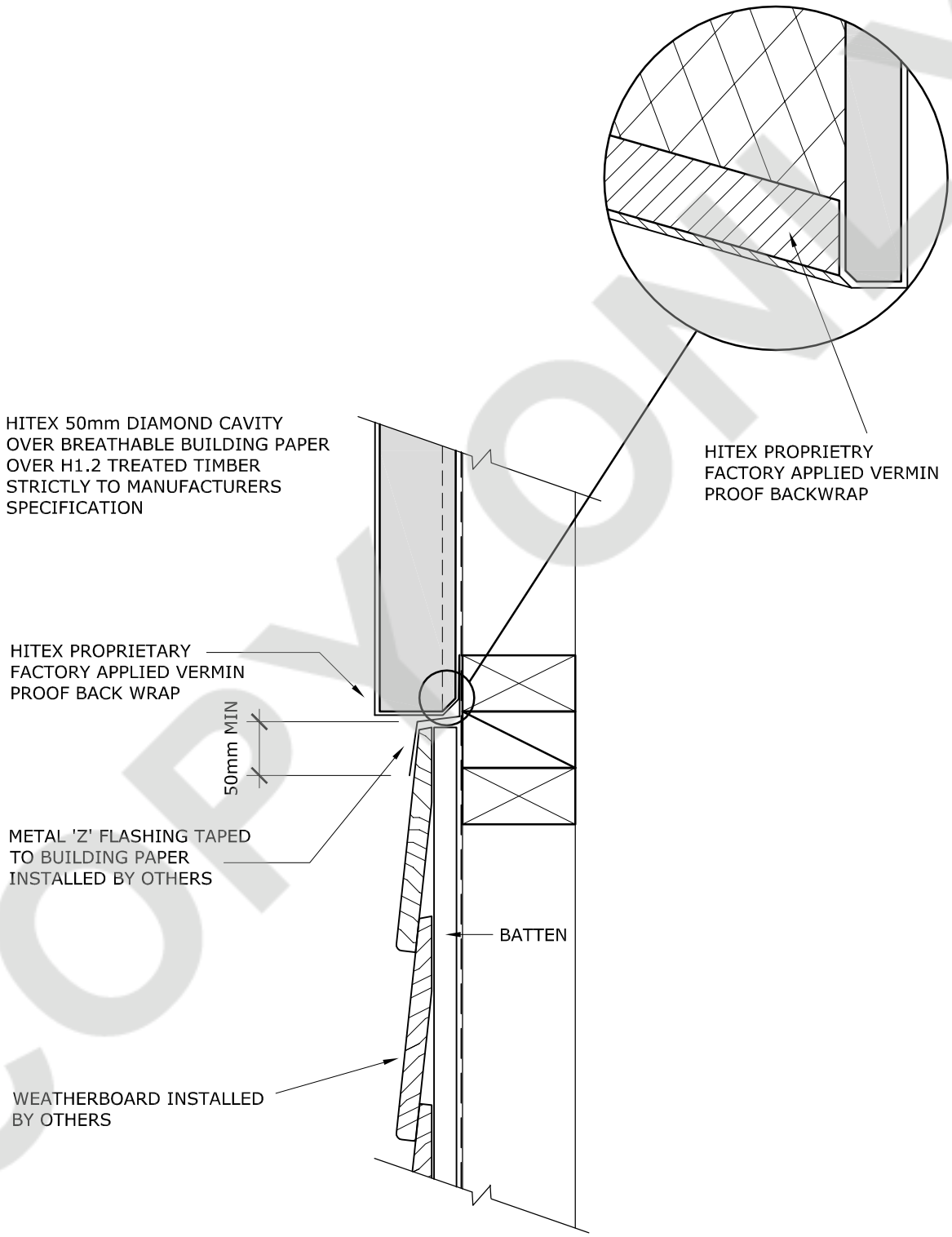
BUILDING SYSTEMS LIMITED

HORIZONTAL JOINT - READY STUD

Not to Scale

DC50-WA-01 Ver 2



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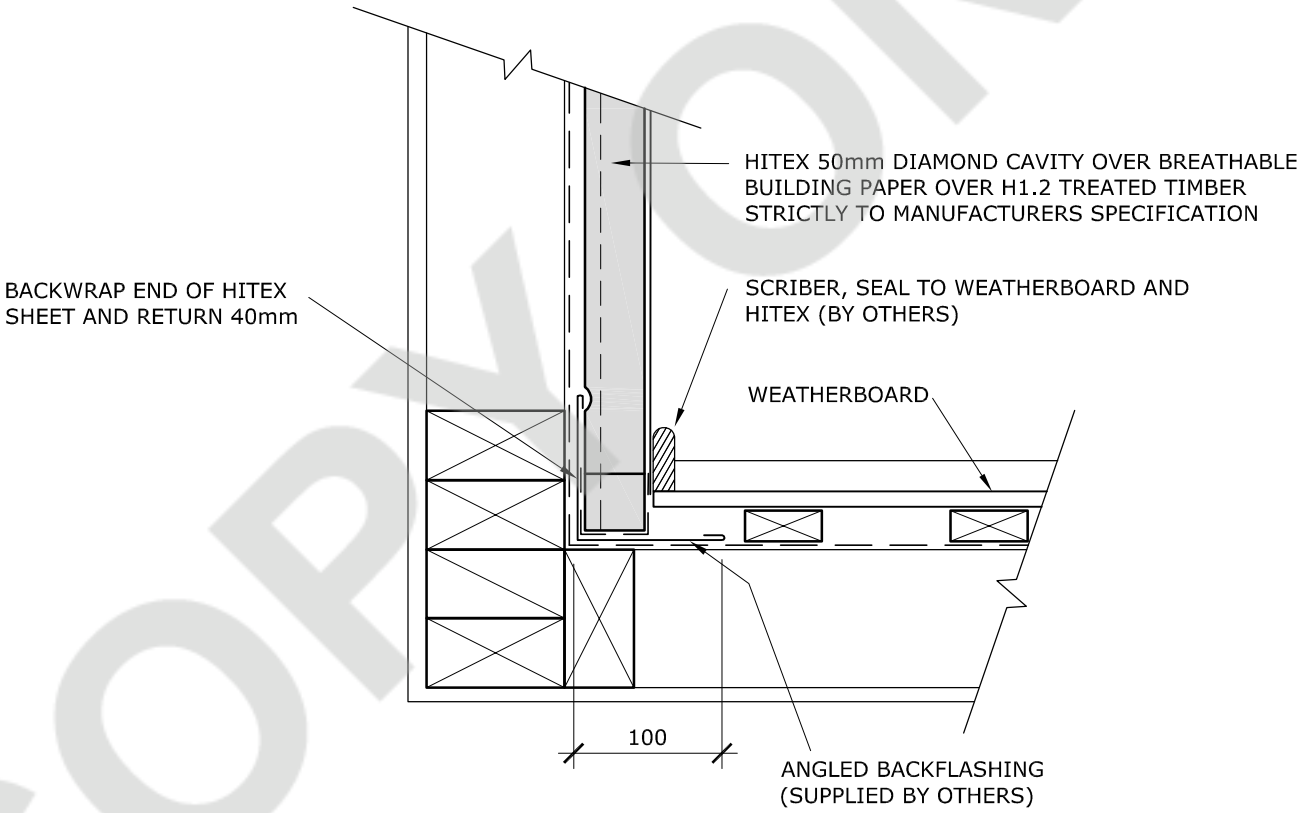
BUILDING SYSTEMS LIMITED

HORIZONTAL JOINT - WEATHERBOARD

Not to Scale

DC50-CA-04 Ver 2



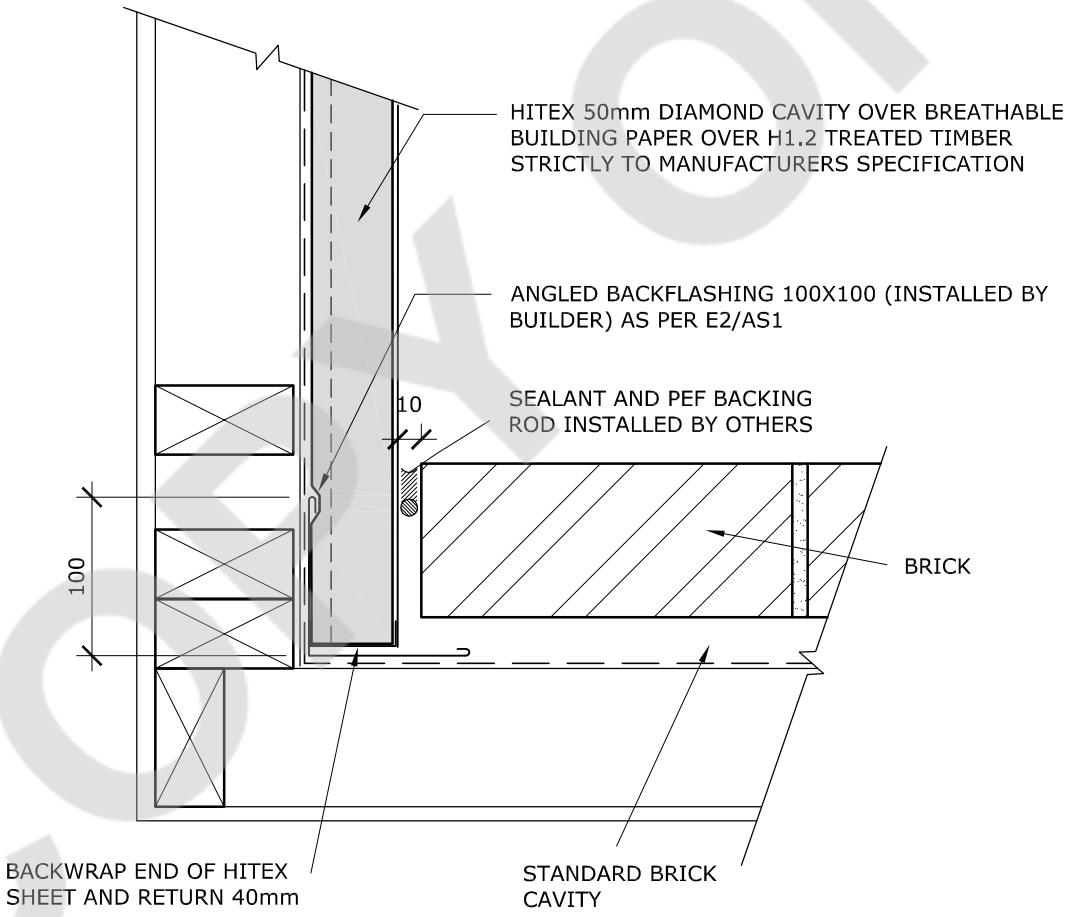
Please visit www.hitex.co.nz
for our latest drawings.

BUILDING SYSTEMS LIMITED

INTERNAL CORNER - WEATHERBOARD

Not to Scale

DC50-CA-03 Ver 2



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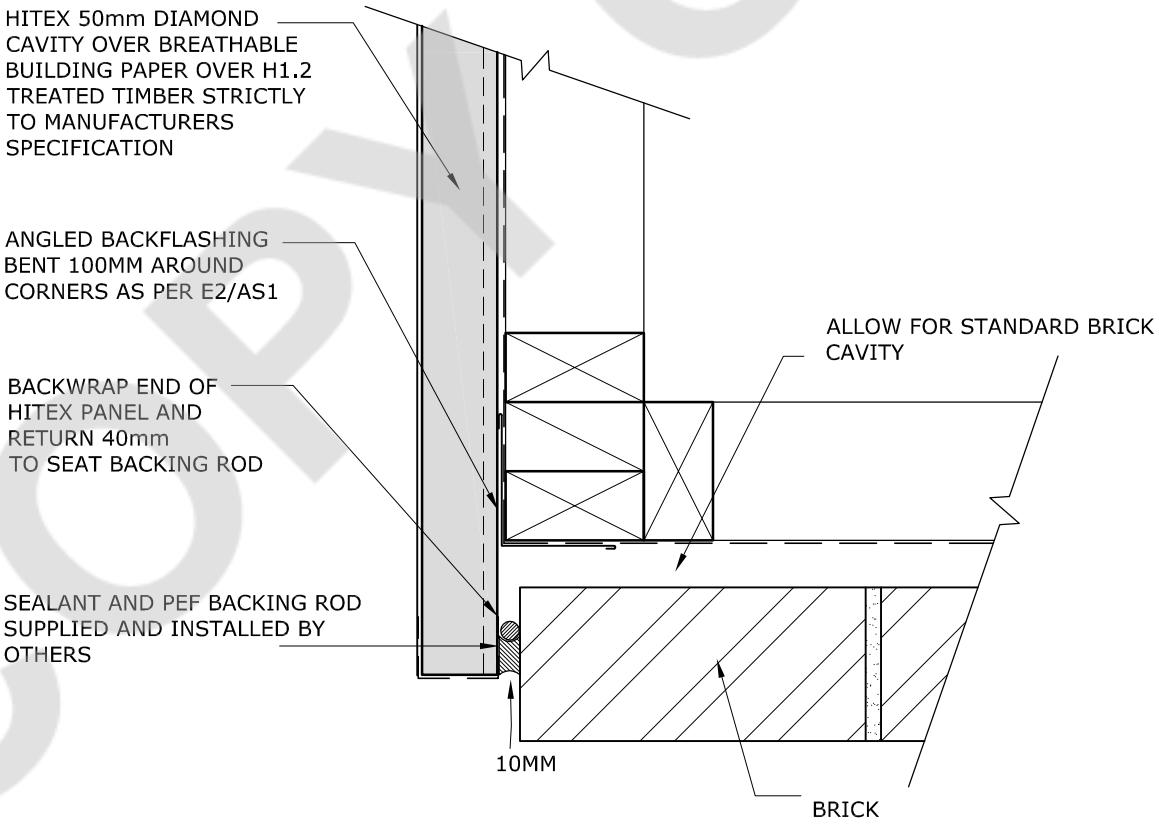
for our latest drawings.

BUILDING SYSTEMS LIMITED

INTERNAL CORNER - BRICK VENEER

Not to Scale

DC50-CA-05 Ver 2



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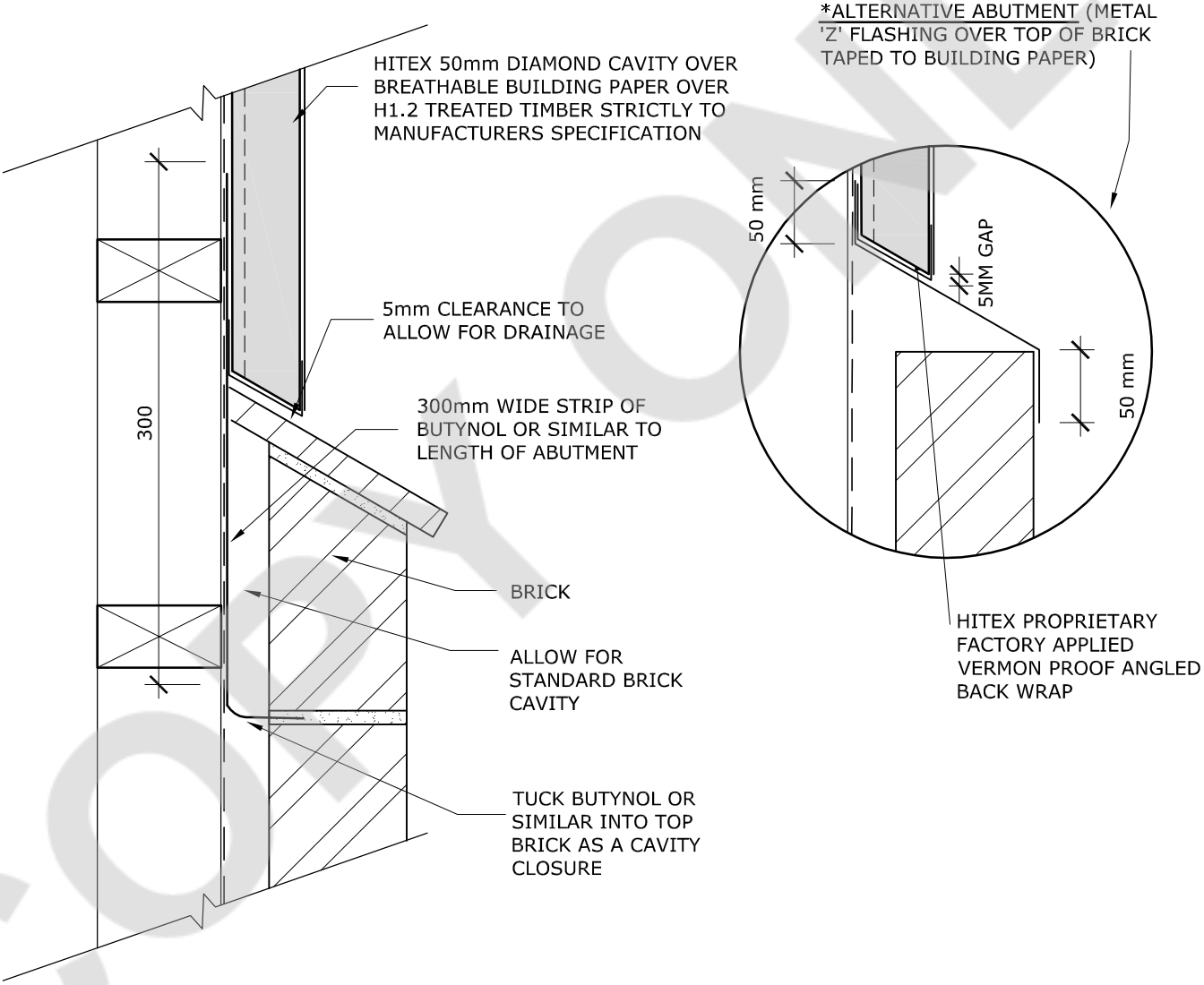
for our latest drawings.

BUILDING SYSTEMS LIMITED

EXTERNAL CORNER - BRICK VENEER

Not to Scale

DC50-CA-06 Ver 2



* NOTE: IF BRICK IS PLASTERED THEN "Z" FLASHING + HITEX INSTALLED AFTER

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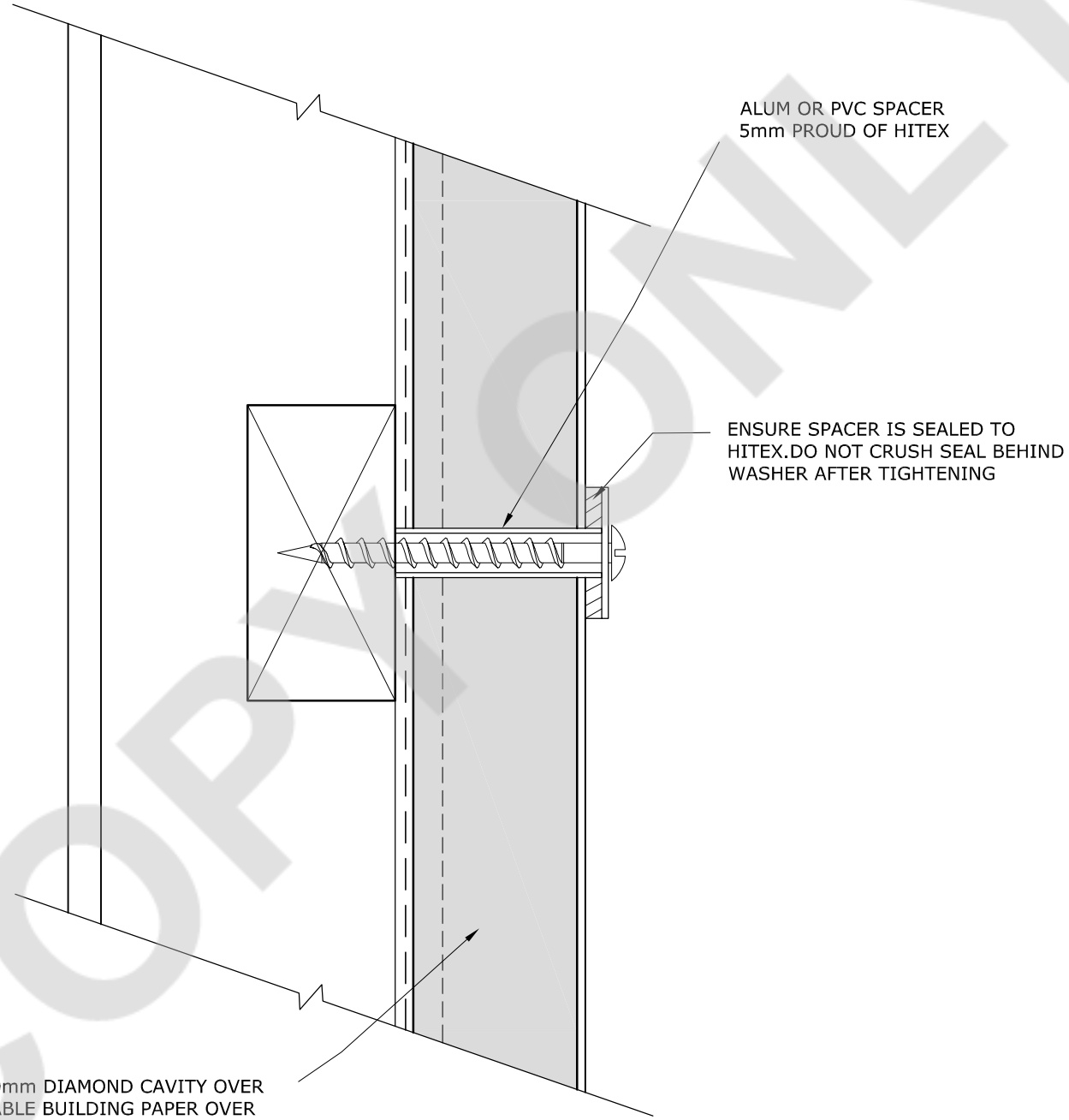
BUILDING SYSTEMS LIMITED

HORIZONTAL JOINT - BRICK VENEER - I

Not to Scale

DC50-CA-07 Ver 2



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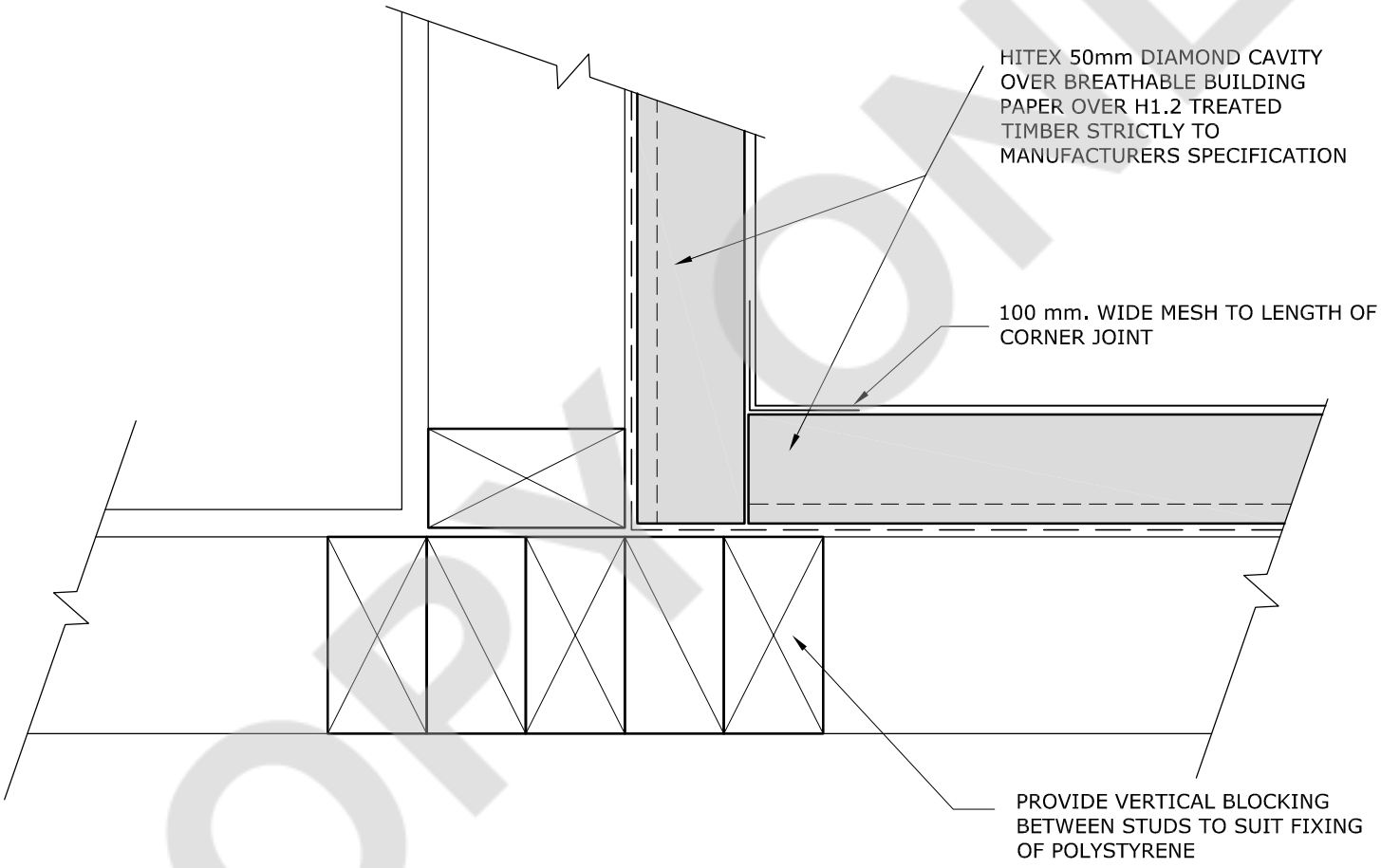
BUILDING SYSTEMS LIMITED

MOUNTING BLOCK - NOG

Not to Scale

DC50-FA-01 Ver 2



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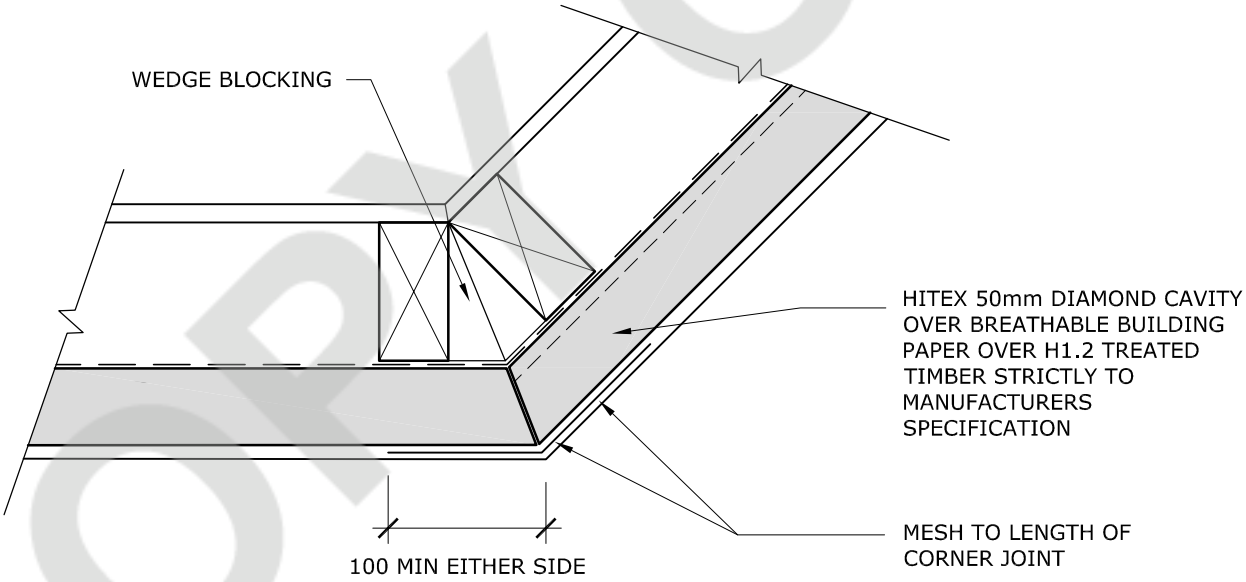
for our latest drawings.

BUILDING SYSTEMS LIMITED

INTERNAL CORNER

Not to Scale

DC50-WA-07 Ver 2



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for our latest drawings.

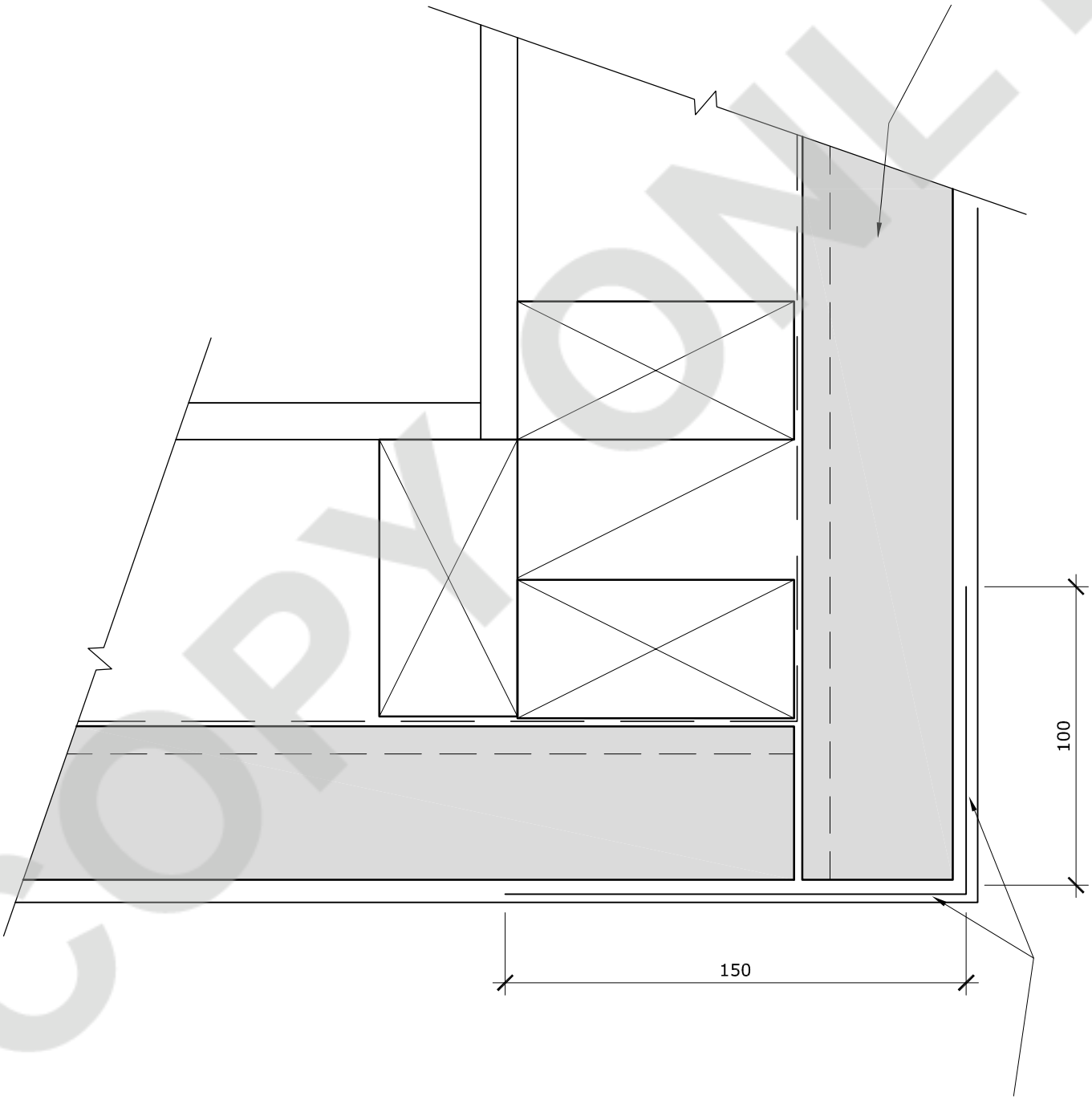
BUILDING SYSTEMS LIMITED

EXTERNAL CORNER 135 DEGREE

Not to Scale

DC50-WA-08 Ver 2

HITEX 50mm DIAMOND CAVITY OVER BREATHABLE BUILDING PAPER OVER H1.2 TREATED TIMBER STRICTLY TO MANUFACTURERS SPECIFICATION



20 x 20 PVC ANGLE WITH 250mm MESH TO LENGTH OF CORNER JOINT (WRAP 150MM TO CUT SIDE)

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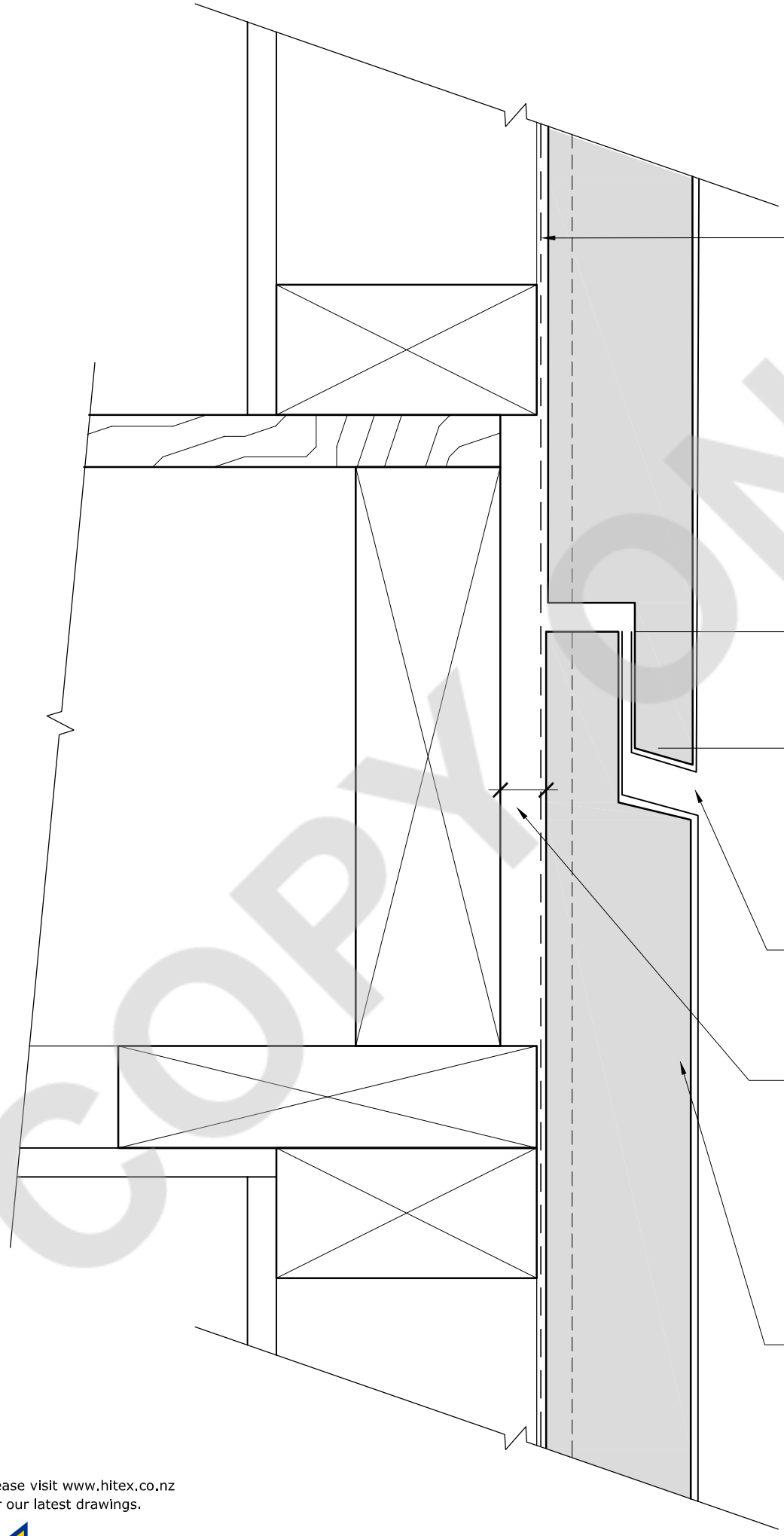

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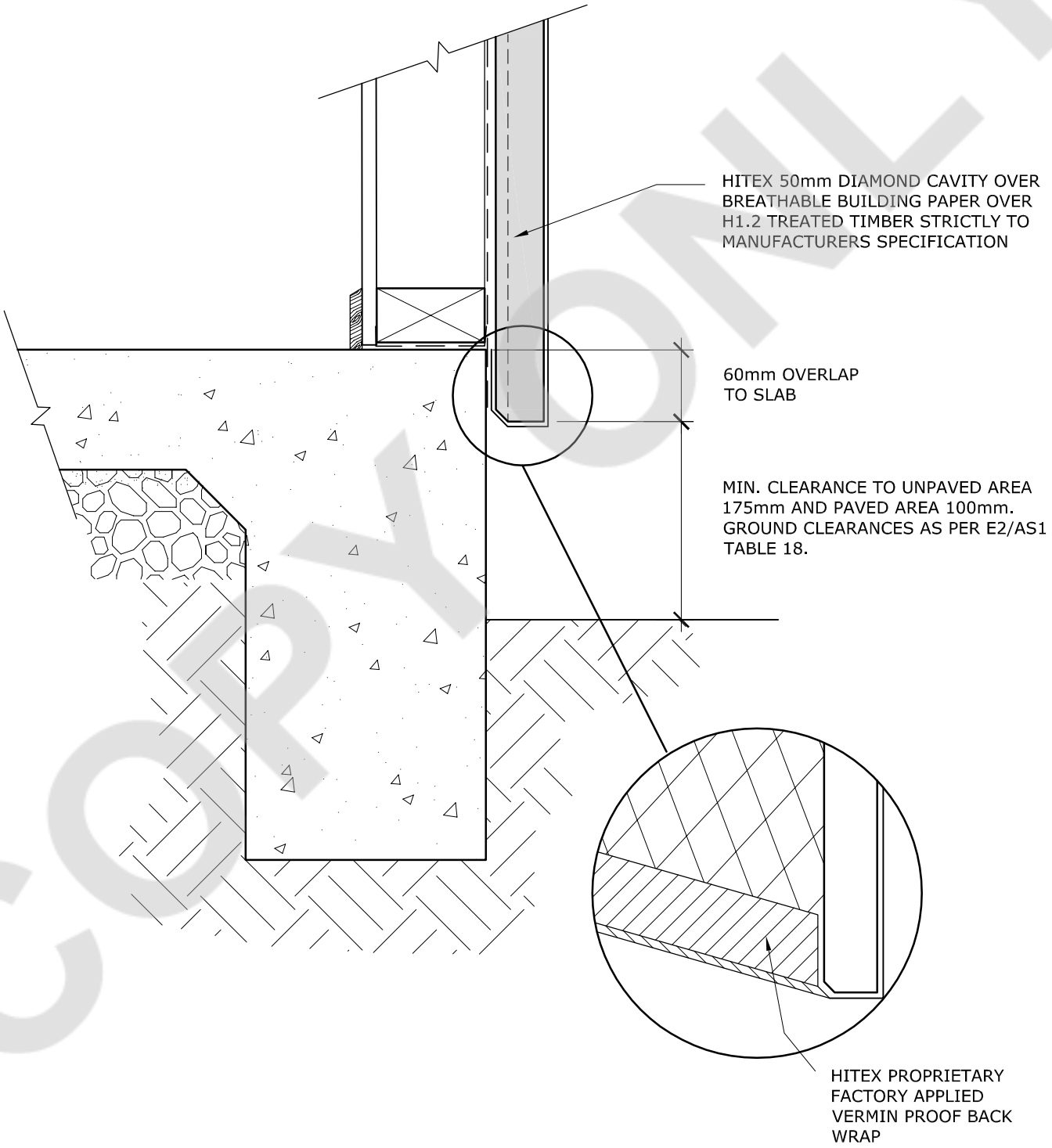
BUILDING SYSTEMS LIMITED

MIDFLOOR HORIZONTAL CONTROL JOINT

Not to Scale

DC50-WA-05 Ver 2



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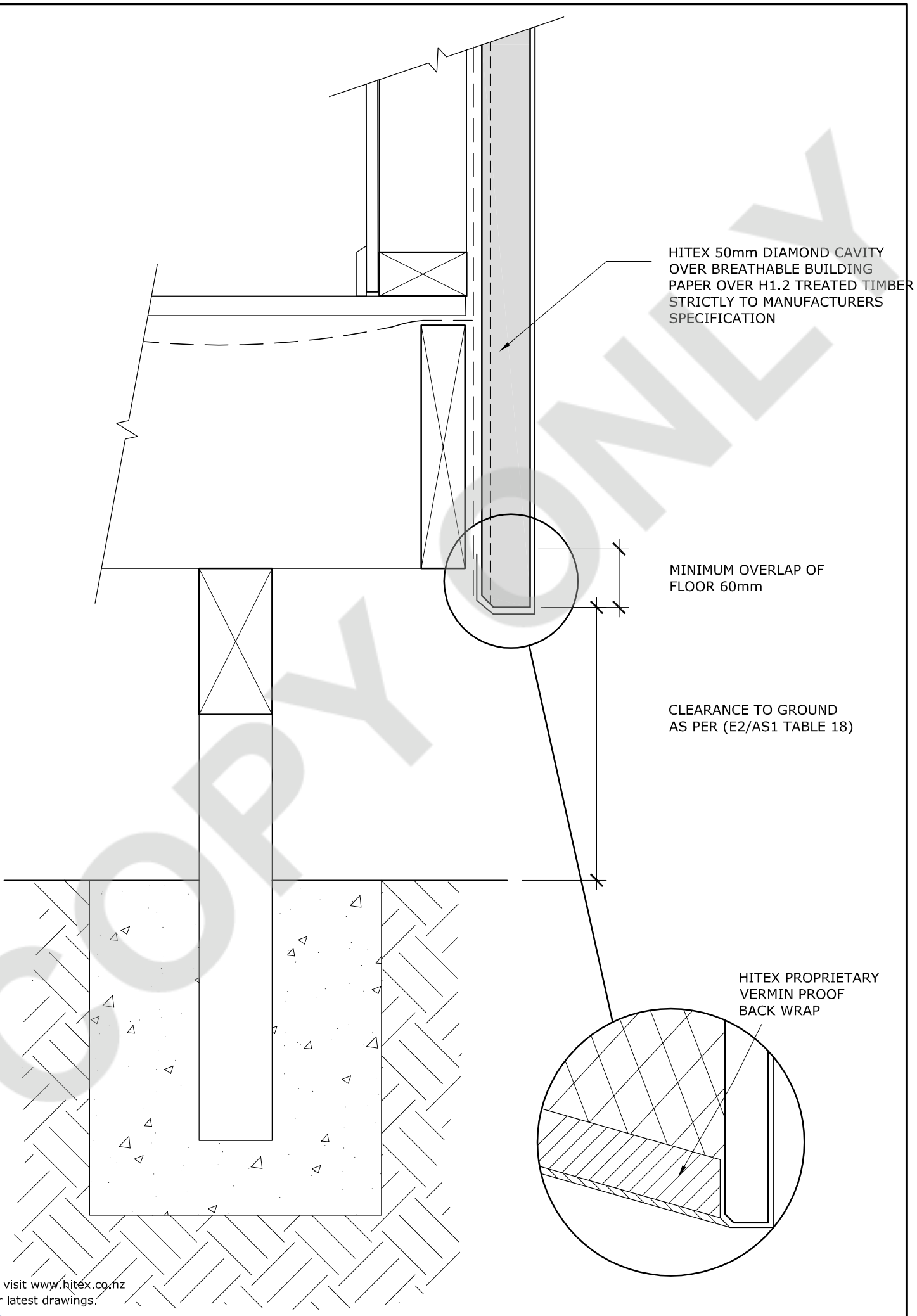
BUILDING SYSTEMS LIMITED

SLAB ON GRADE

Not to Scale

DC50-BL-01 Ver 2



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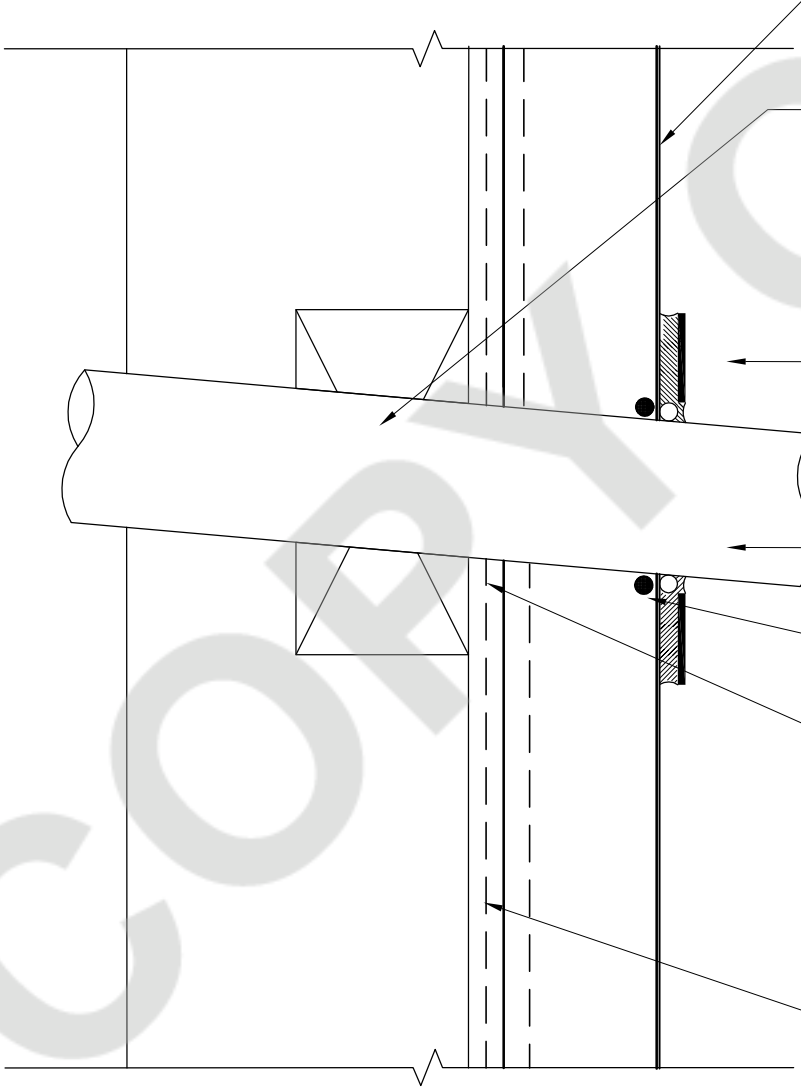
BUILDING
SYSTEMS
LIMITED

PILE SUB-FLOOR

Not to Scale

DC50-BL-02 Ver 2

PENETRATIONS MUST BE INSERTED PRIOR TO CLADDING INSTALLATION



HITEX 50mm DIAMOND CAVITY OVER BREATHABLE BUILDING PAPER OVER H1.2 TREATED TIMBER STRICTLY TO MANUFACTURERS SPECIFICATION

ENSURE PIPE IS SECURELY FASTENED AND SET AT A MIN OF 5 DEGREE FALL (SLIGHT FALL)

PVC FLANGE INSTALLED BY PLUMBER WHERE NECESSARY

SELECTED PIPE

ALTERNATIVE TO UPVC FLANGE. INSTALL 10MM WIDE 6MM DEEP SEALANT ON PEF ROD BETWEEN PIPE AND HITEX

BUILDING WRAP TURNED OUT AND TAPED ONTO PIPE USING FLASHING TAPE (25mm AROUND PIPE AND 100mm ONTO WRAP)

BREATHABLE BUILDING WRAP

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BUILDING SYSTEMS LIMITED

PIPE PENETRATION

Not to Scale

DC50-PEN-02 Ver 2

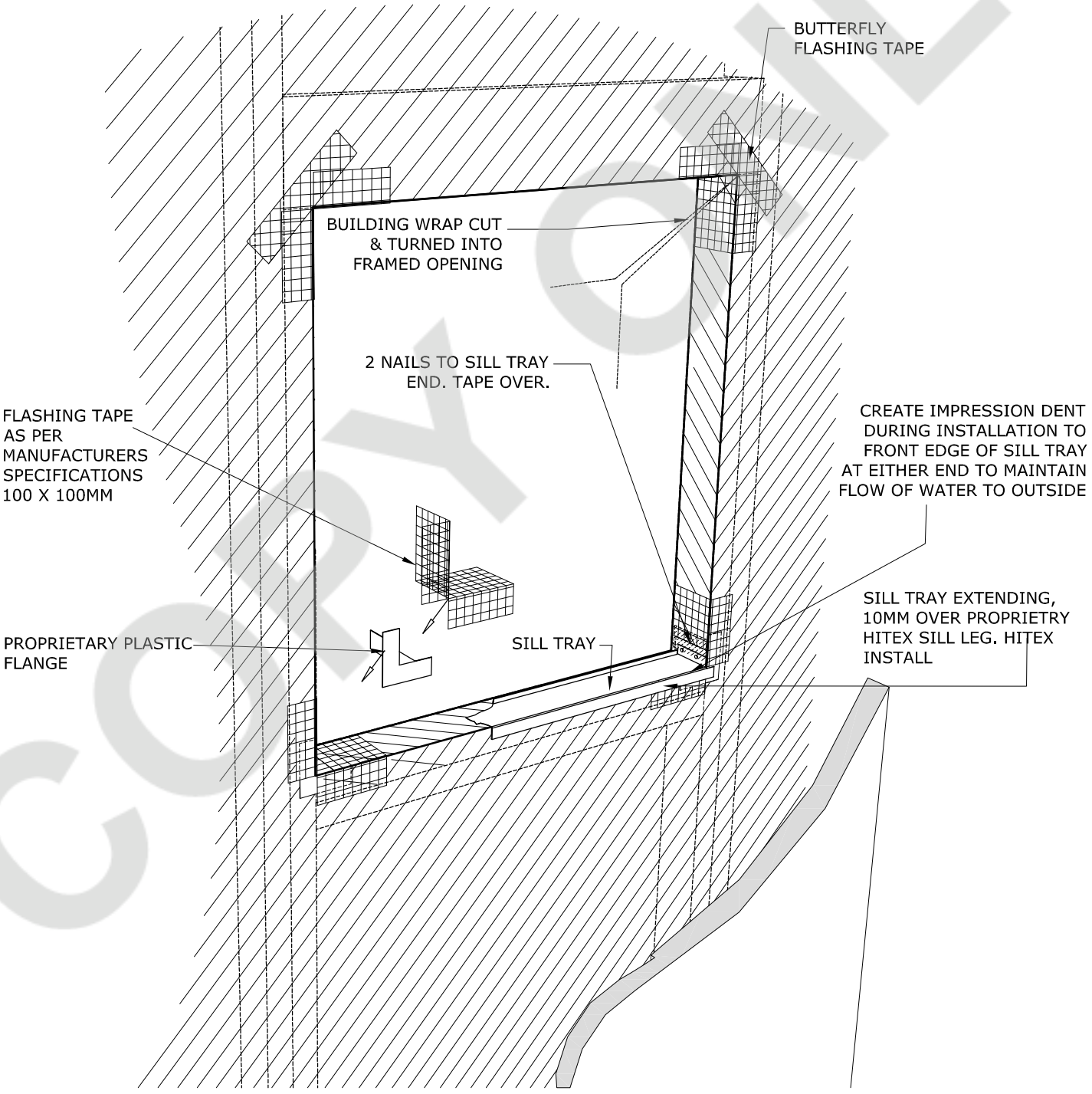
NB
THE BUILDING WRAP SHALL BE IN ACCORDANCE WITH TABLE 23 OF E2/AS1, AND SHALL:

A) BE RUN HORIZONTALLY

B) UPPER SHEETS LAPPED OVER LOWER SHEETS TO ENSURE THAT DIRECTION OF LAPS WILL ALLOW WATER TO BE SHED TO OUTSIDE OF THE BUILDING WRAP

C) BE LAPPED NOT LESS THAN 75mm AT THE HORIZONTAL JOINTS

D) BE LAPPED NOT LESS THAN 150mm OVER STUDS AT VERTICAL JOINTS.



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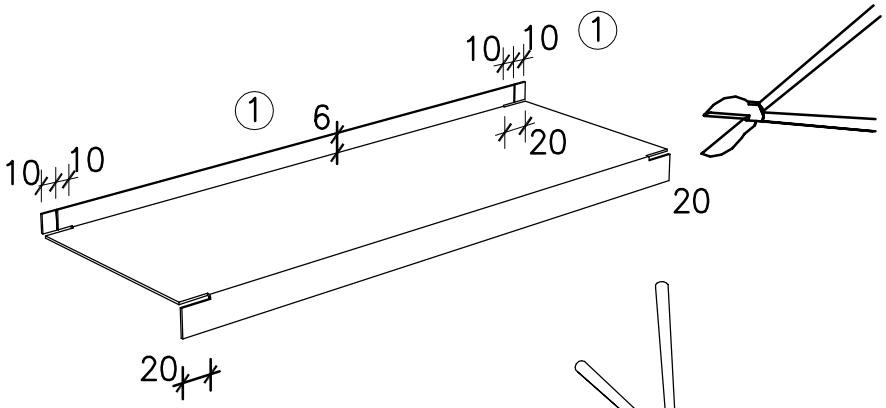
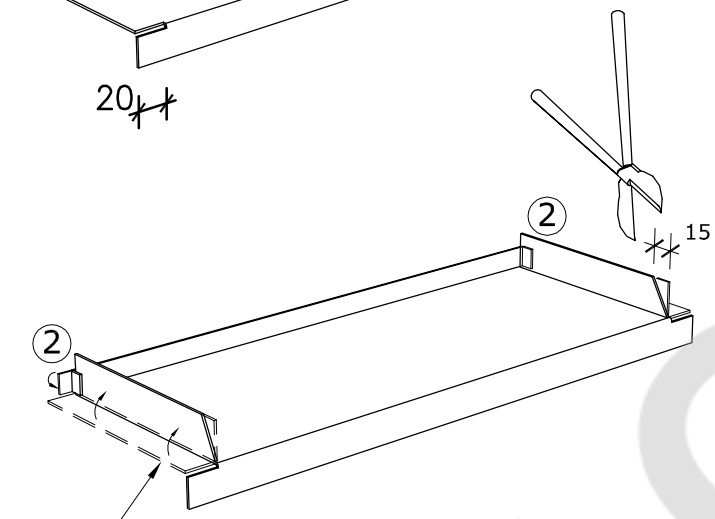
BUILDING SYSTEMS LIMITED

WINDOW BUILDING WRAP

Not to Scale

DC50-WI-01 Ver 2

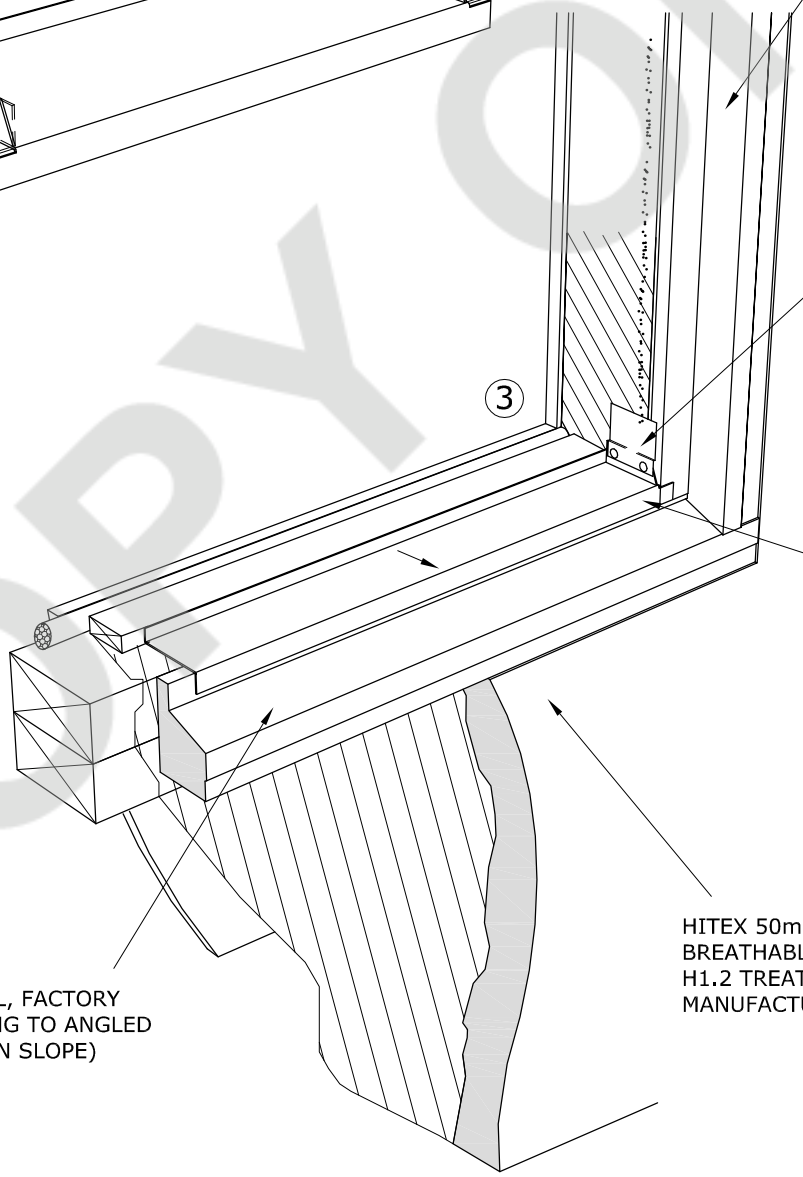




HITEX
UNDERSILL
TRAY

HITEX FACTORY
APPLIED PLASTER AND
MESH COAT JAMB

TAPE UNDERSILL TRAY
END UPSTAND TO
BUILDING PAPER



CREATE IMPRESSION DENT
DURING INSTALLATION TO
FRONT EDGE OF SILL TRAY
AT EITHER END TO MAINTAIN
FLOW OF WATER TO OUTSIDE

HITEX 50mm DIAMOND CAVITY OVER
BREATHABLE BUILDING PAPER OVER
H1.2 TREATED TIMBER STRICTLY TO
MANUFACTURERS SPECIFICATION

HITEX PROPRIETARY SILL, FACTORY
APPLIED WATERPROOFING TO ANGLED
SURFACE(10 DEGREE MIN SLOPE)

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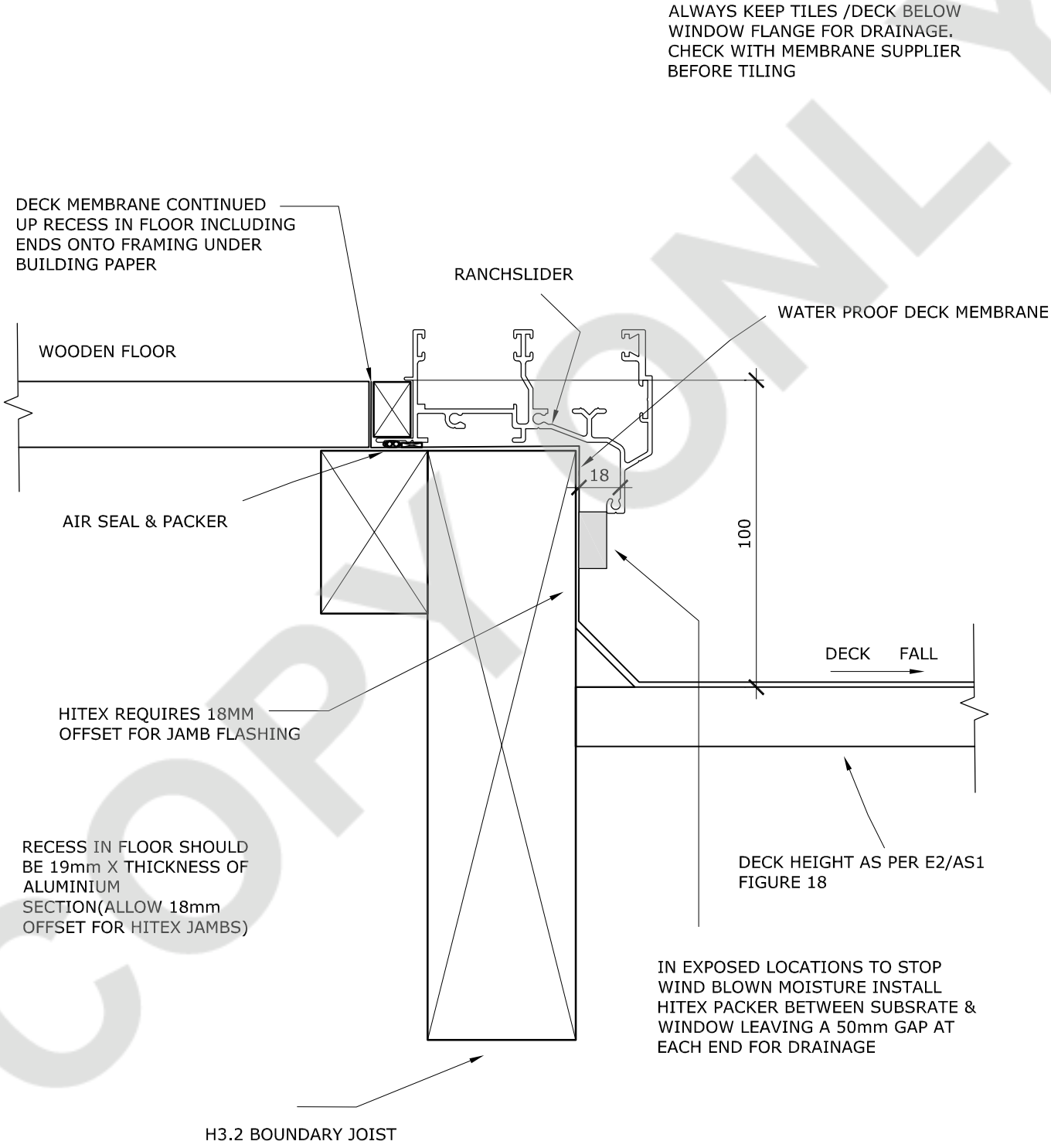
BUILDING
SYSTEMS
LIMITED

UNDERSILL TRAY ASSEMBLY

Not to Scale

DC50-WI-02 Ver 2



AS PER FIGURE 17A-E2/AS1

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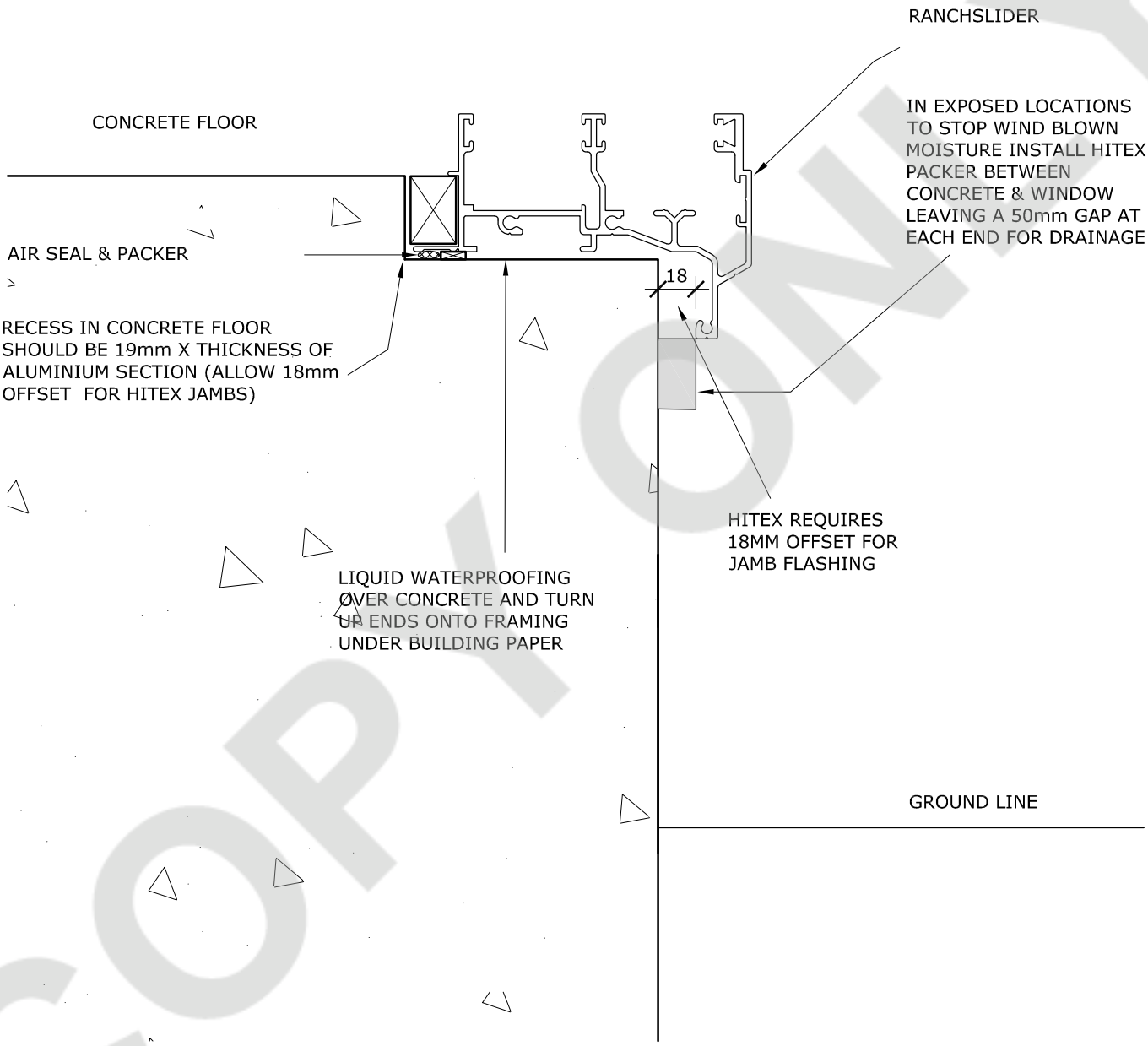
BUILDING SYSTEMS LIMITED

DOOR OPENING - WOODEN FLOORS

Not to Scale

DC50-DO-01 Ver 2



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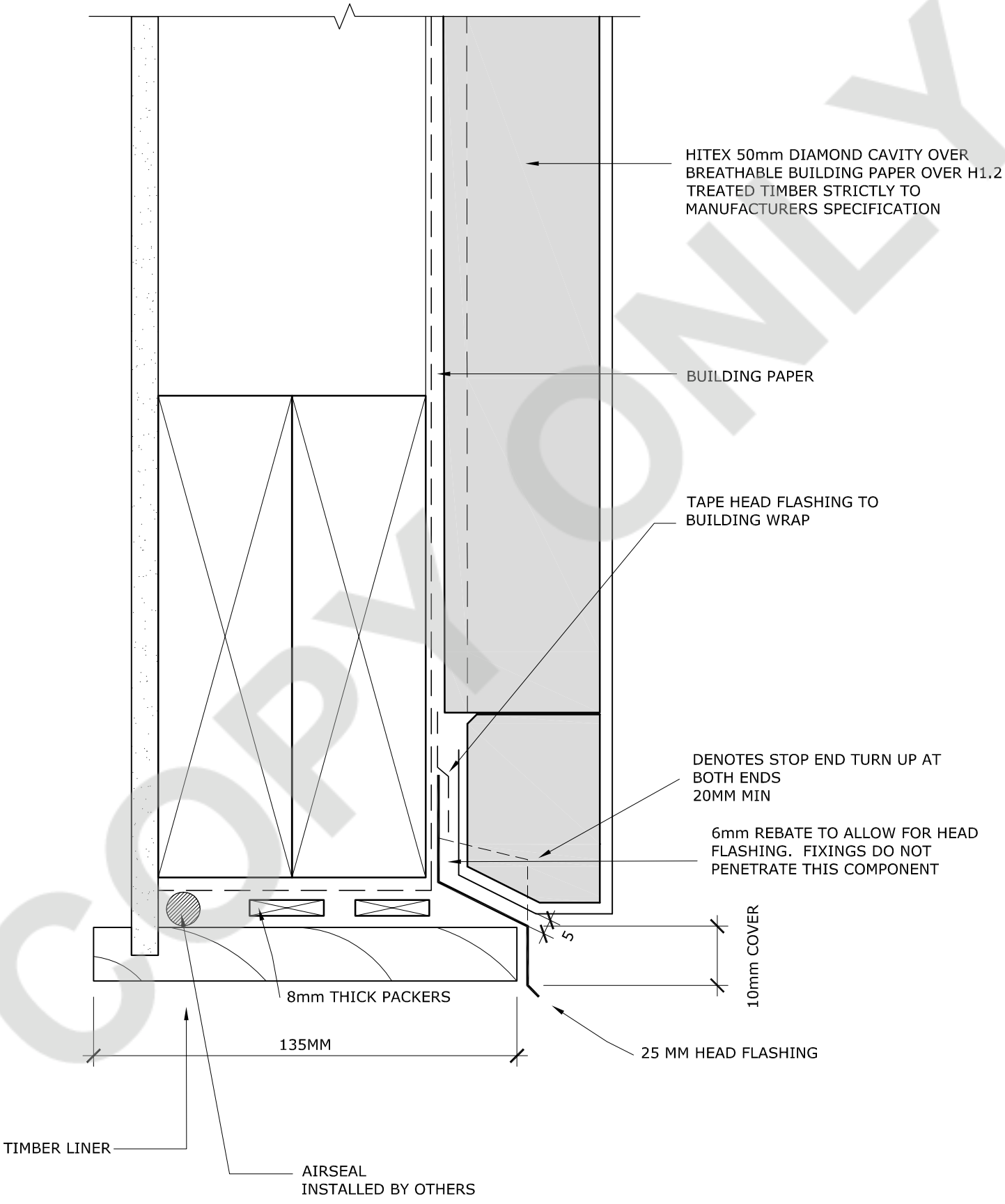
BUILDING SYSTEMS LIMITED

DOOR OPENING - CONCRETE FLOORS

Not to Scale

DC50-DO-02 Ver 2



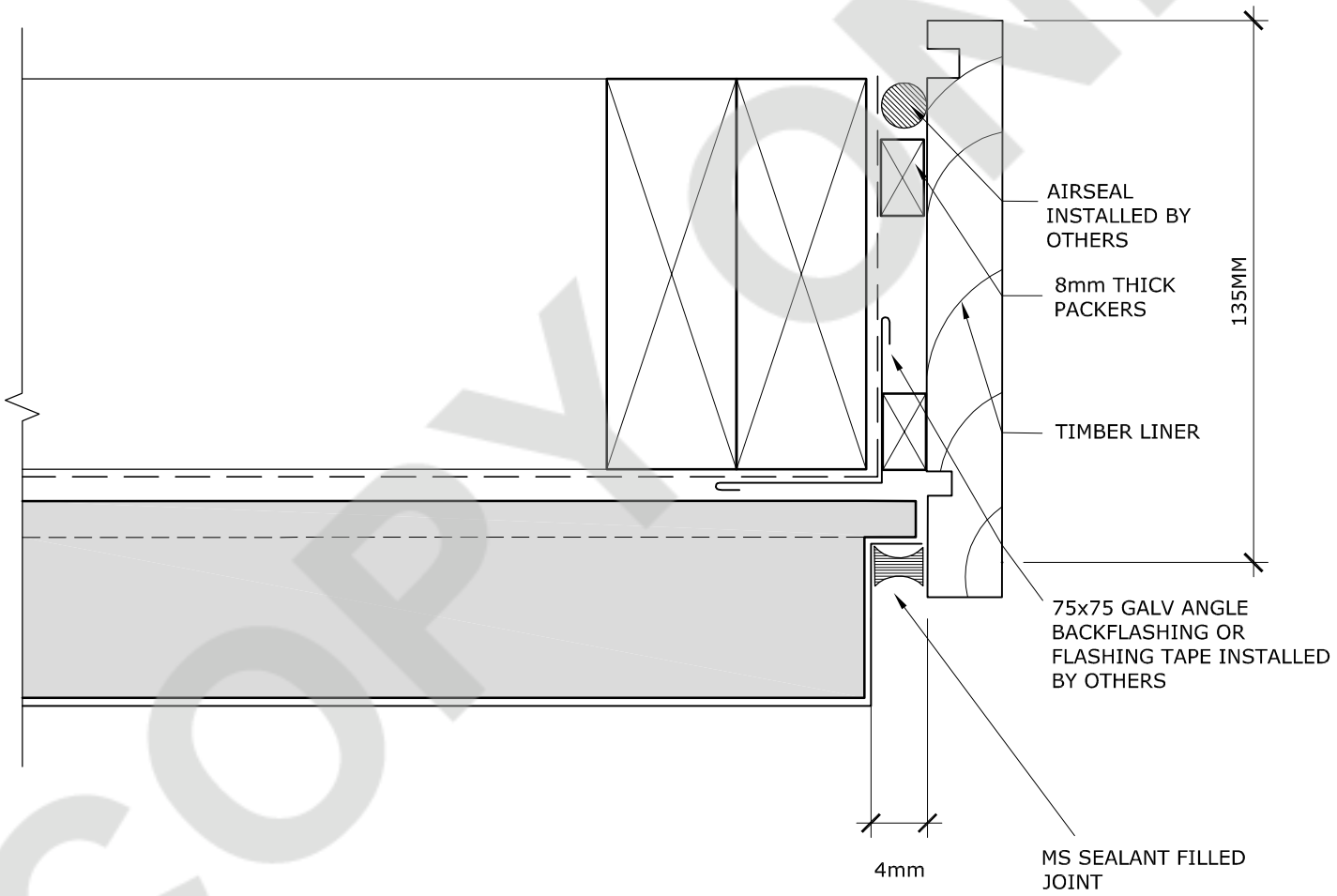
Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

GARAGE HEAD

Not to Scale

DC50-DO-03 Ver 2



HITEX 50mm DIAMOND CAVITY
OVER BREATHABLE BUILDING
PAPER OVER H1.2 TREATED TIMBER
STRICTLY TO MANUFACTURERS
SPECIFICATION

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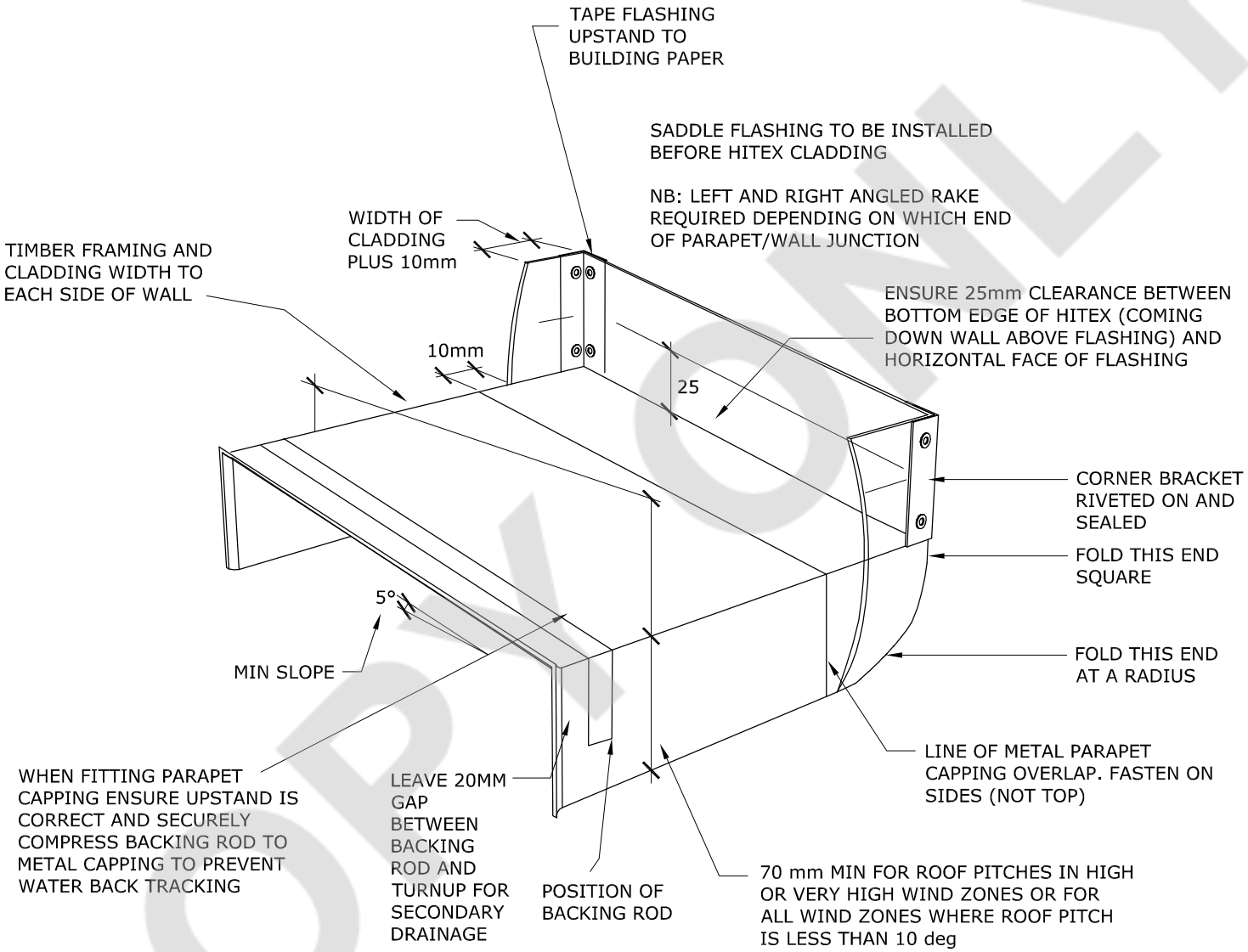
BUILDING
SYSTEMS
LIMITED

GARAGE JAMB

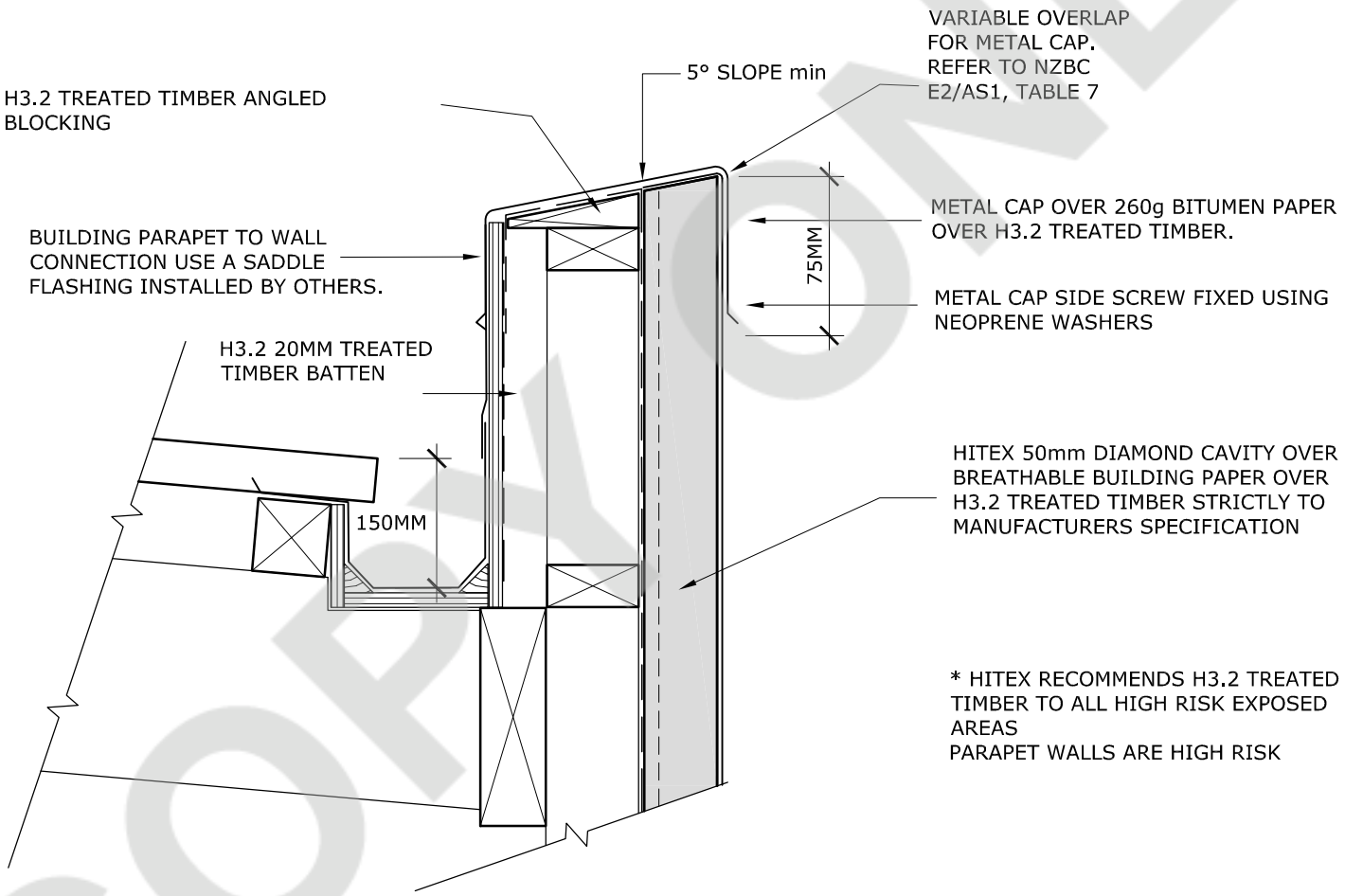
Not to Scale

DC50-DO-04 Ver 2



METAL PARAPET CAPPING END TERMINATION TO WALLS. THIS IS A HITEX PREFERED OPTION. ALL PARAPETS MUST HAVE AN EARLY WARNING MOISTURE DETCTION SYSTEM INSTALLED.
HITEX DO NOT SUPPLY OR INSTALL THESE FLASHINGS UNLESS SPECIFIED.

Please visit www.hitex.co.nz for our latest drawings.



MDU PROBES TO BE INSTALLED IN PARAPET LOCATIONS

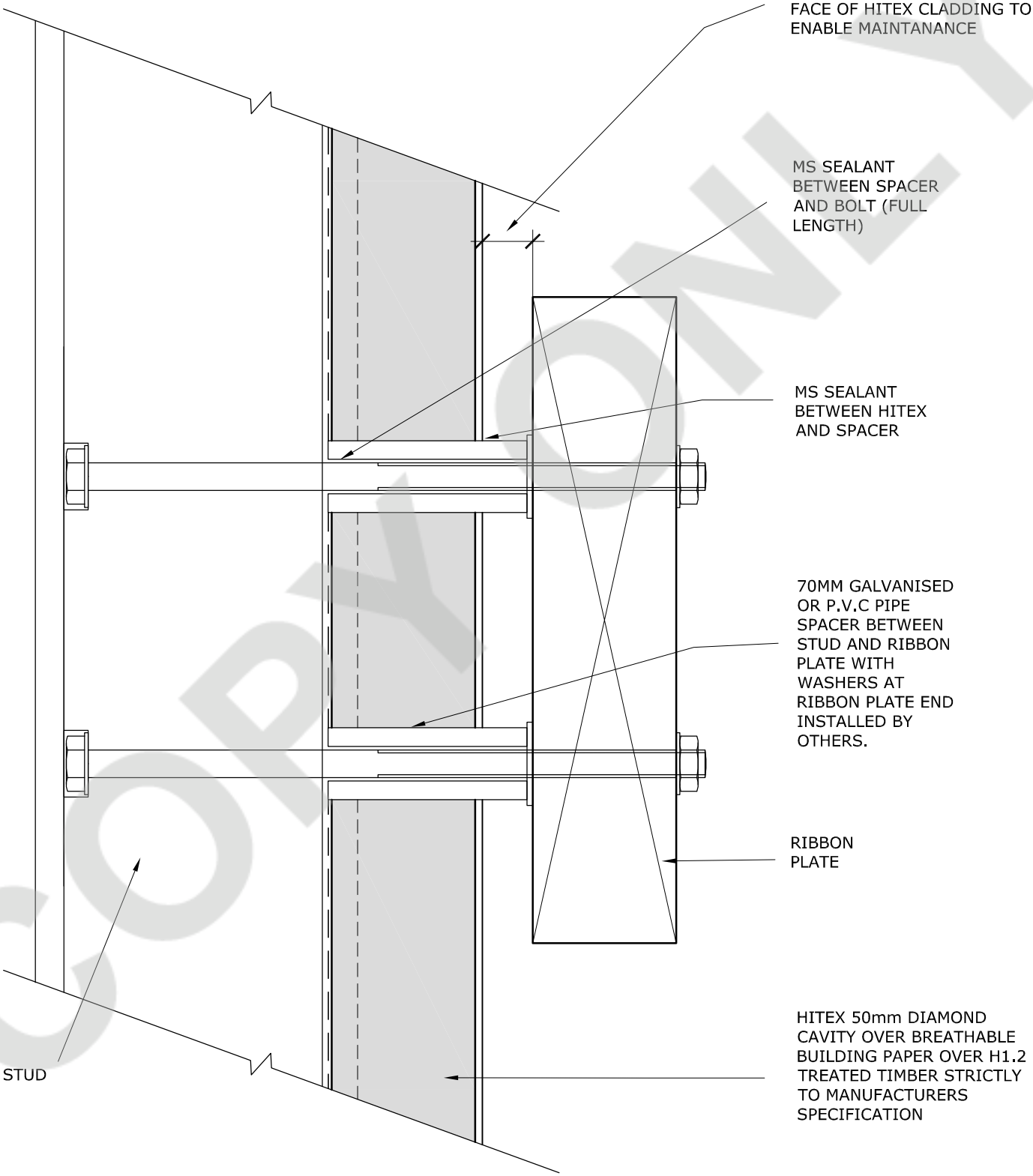
Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

PARAPET - METAL CAPPING

Not to Scale

DC50-PA-01 Ver 2



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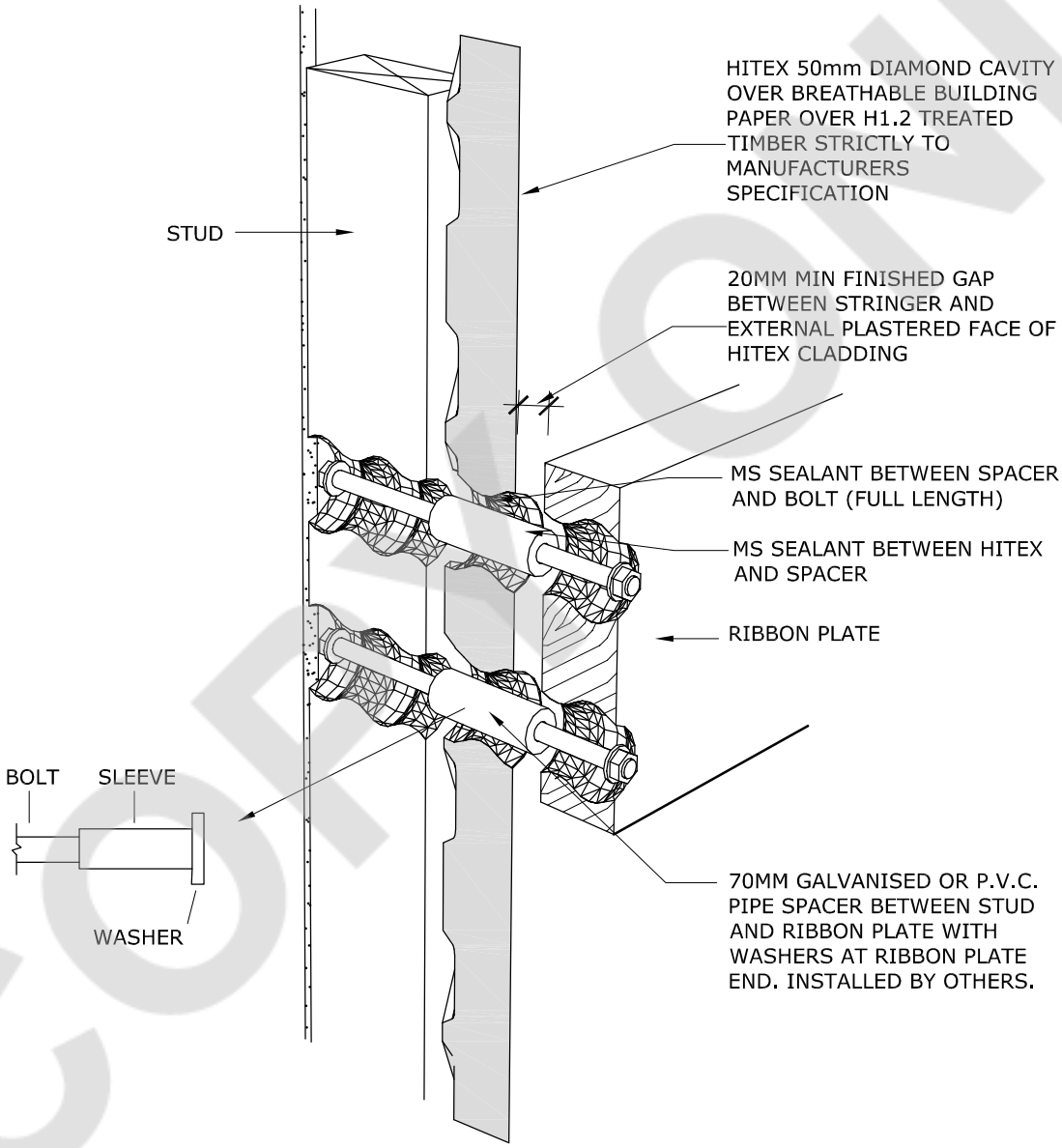
BUILDING SYSTEMS LIMITED

PERGOLA MOUNTING PLATE

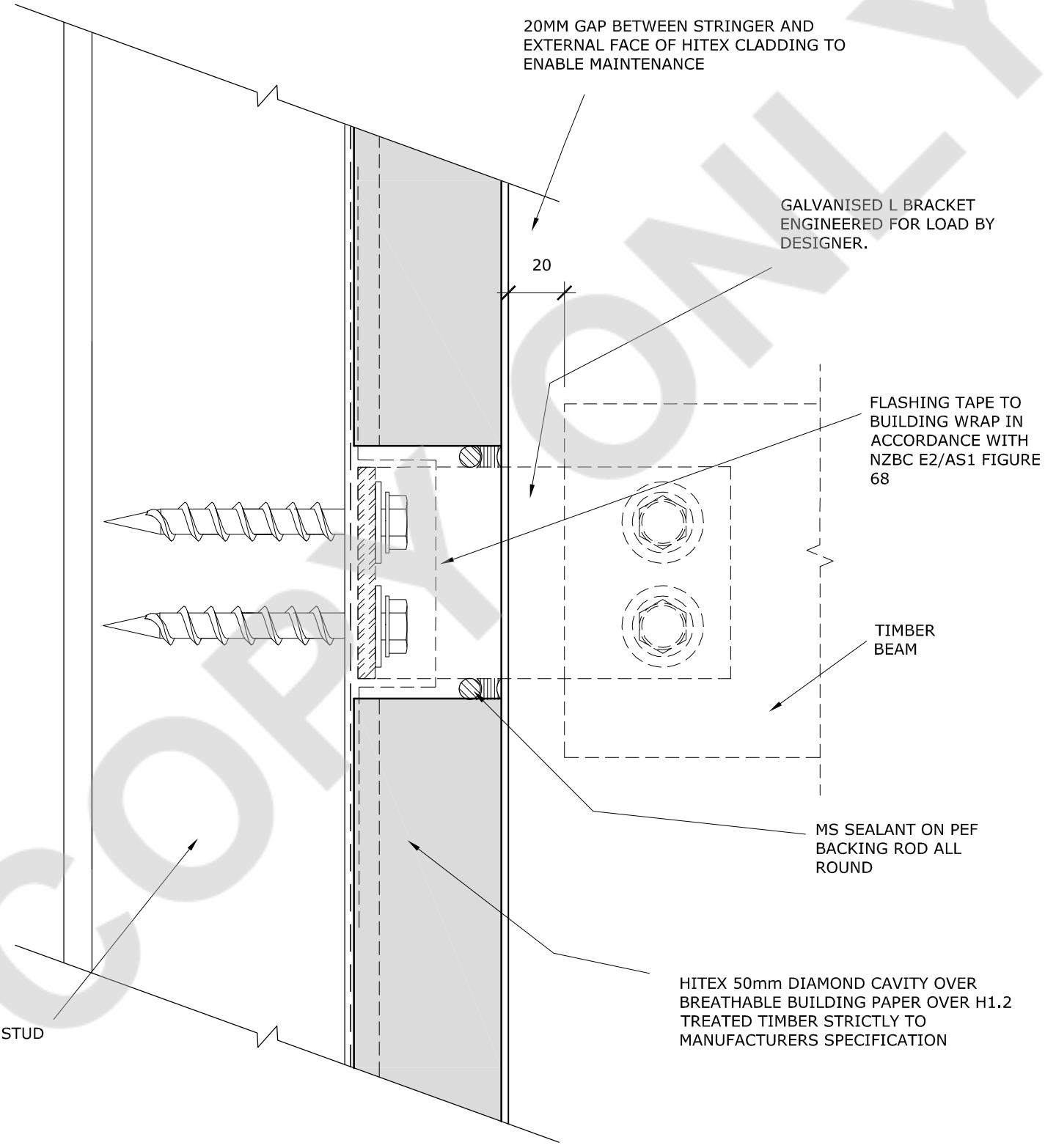
Not to Scale

DC50-FA-03 Ver 2



CALCULATIONS OF BOLT SIZE AND SPACINGS TO BE SPECIFICALLY DESIGNED BY DESIGNER

Please visit www.hitex.co.nz for our latest drawings.



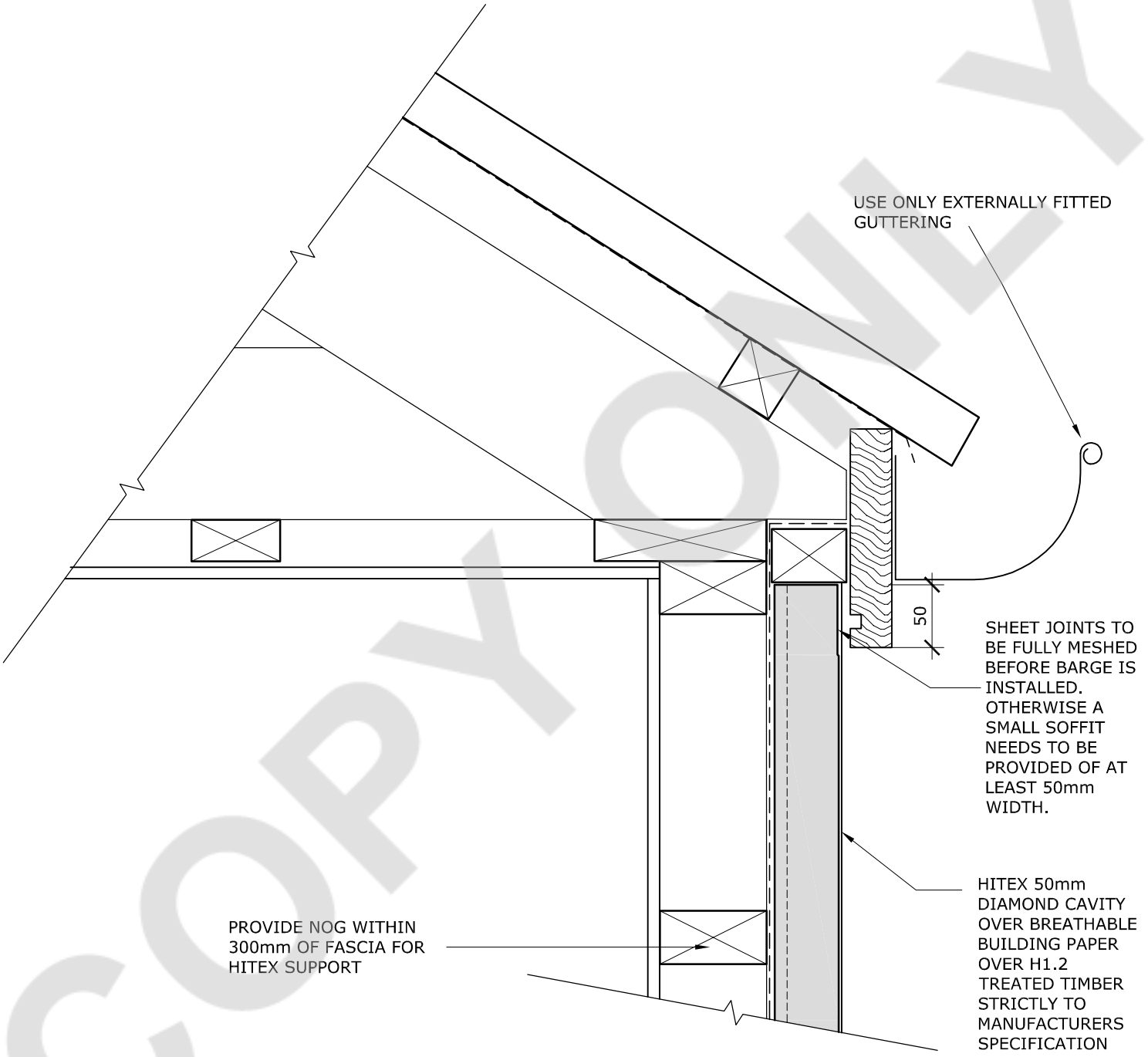
Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

PERGOLA MOUNTING BRACKET

Not to Scale

DC50-FA-05 Ver 2



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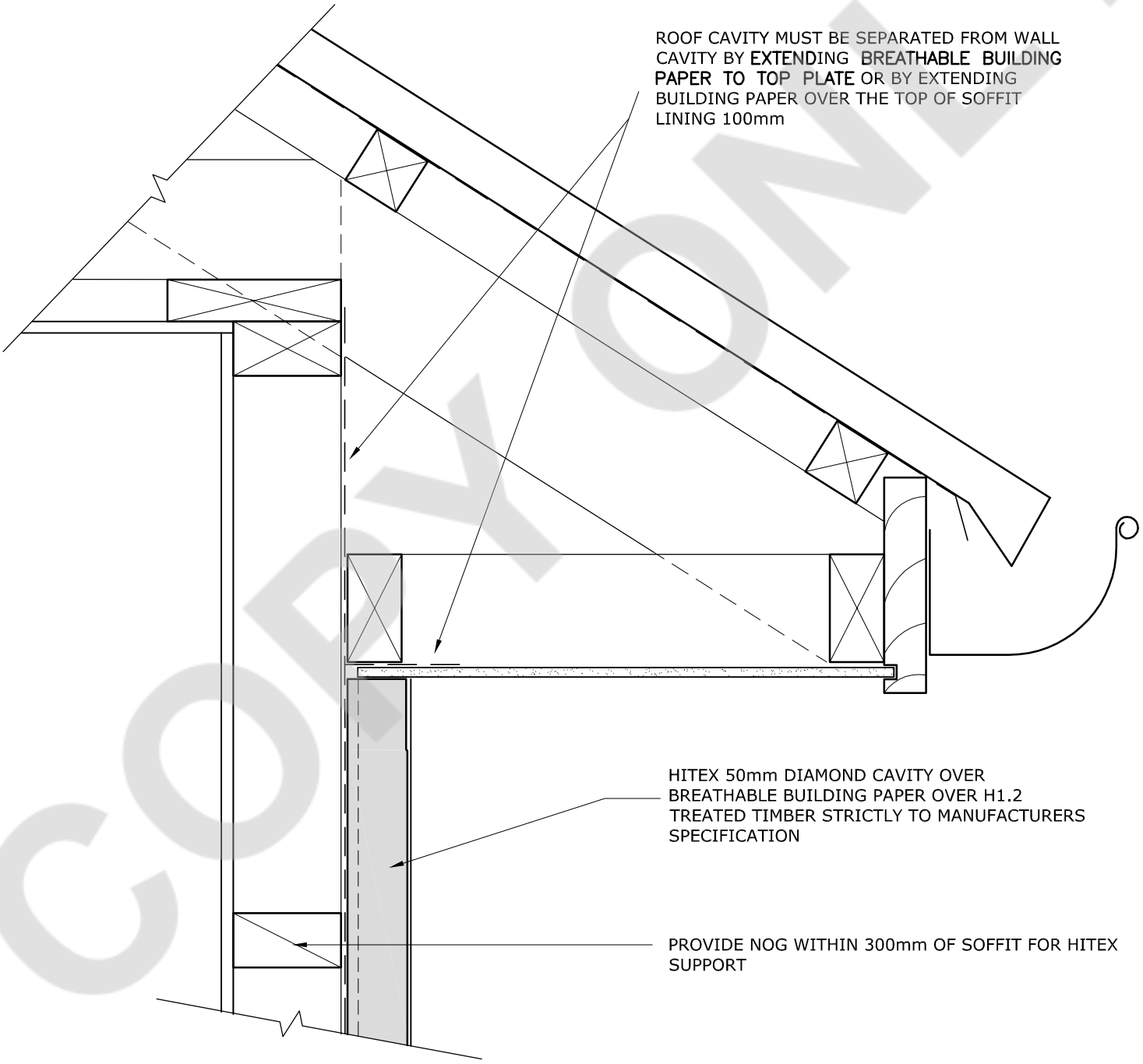
BUILDING SYSTEMS LIMITED

EAVES DETAIL - NO SOFFIT

Not to Scale

DC50-WA-12 Ver 2



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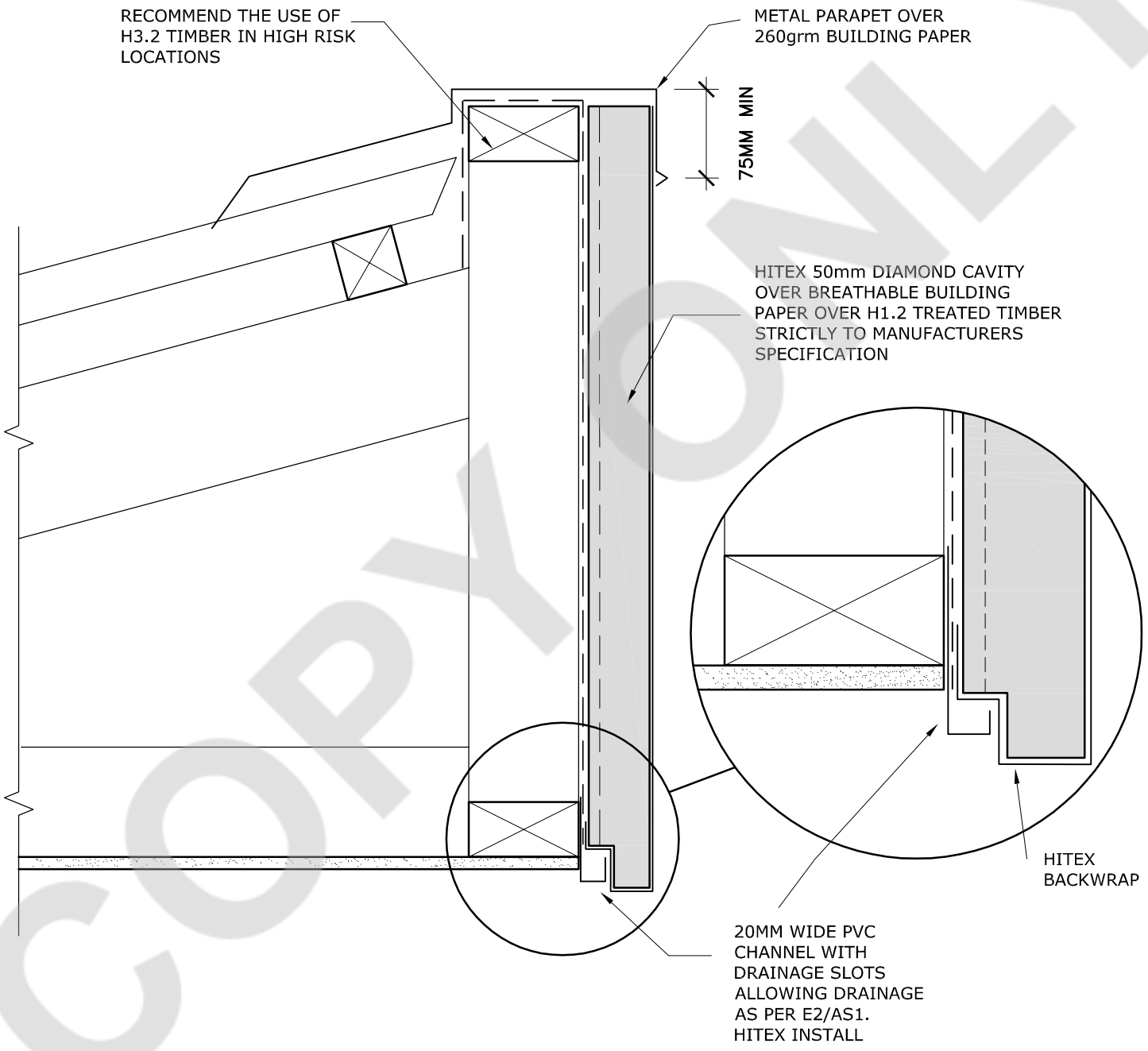
for our latest drawings.

BUILDING SYSTEMS LIMITED

EAVES - SOFFIT

Not to Scale

DC50-WA-13 Ver 2



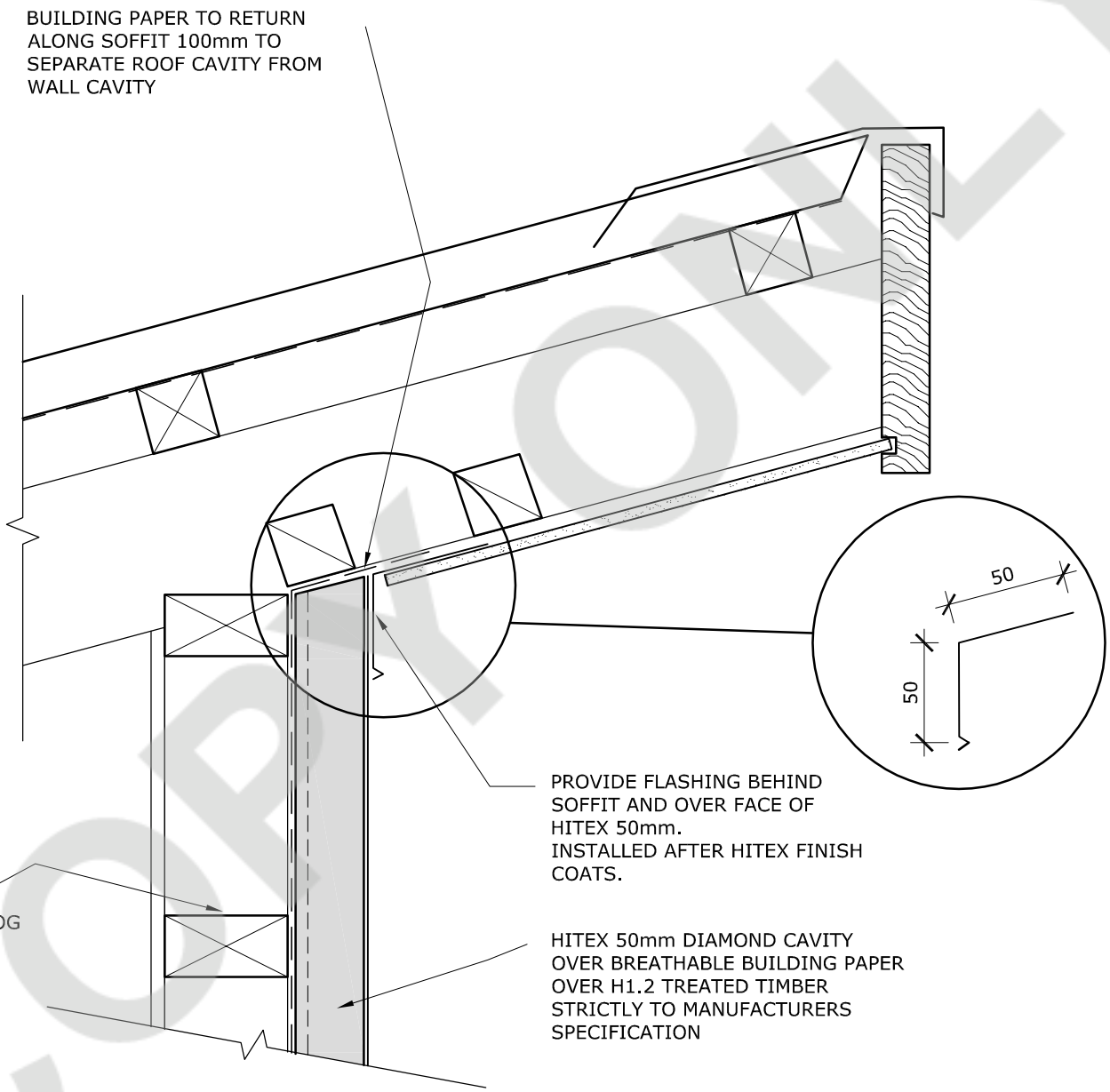
Please visit www.hitex.co.nz
for our latest drawings.

BUILDING SYSTEMS LIMITED

SOFFIT WITH DRIP EDGE

Not to Scale

DC50-WA-14 Ver 2



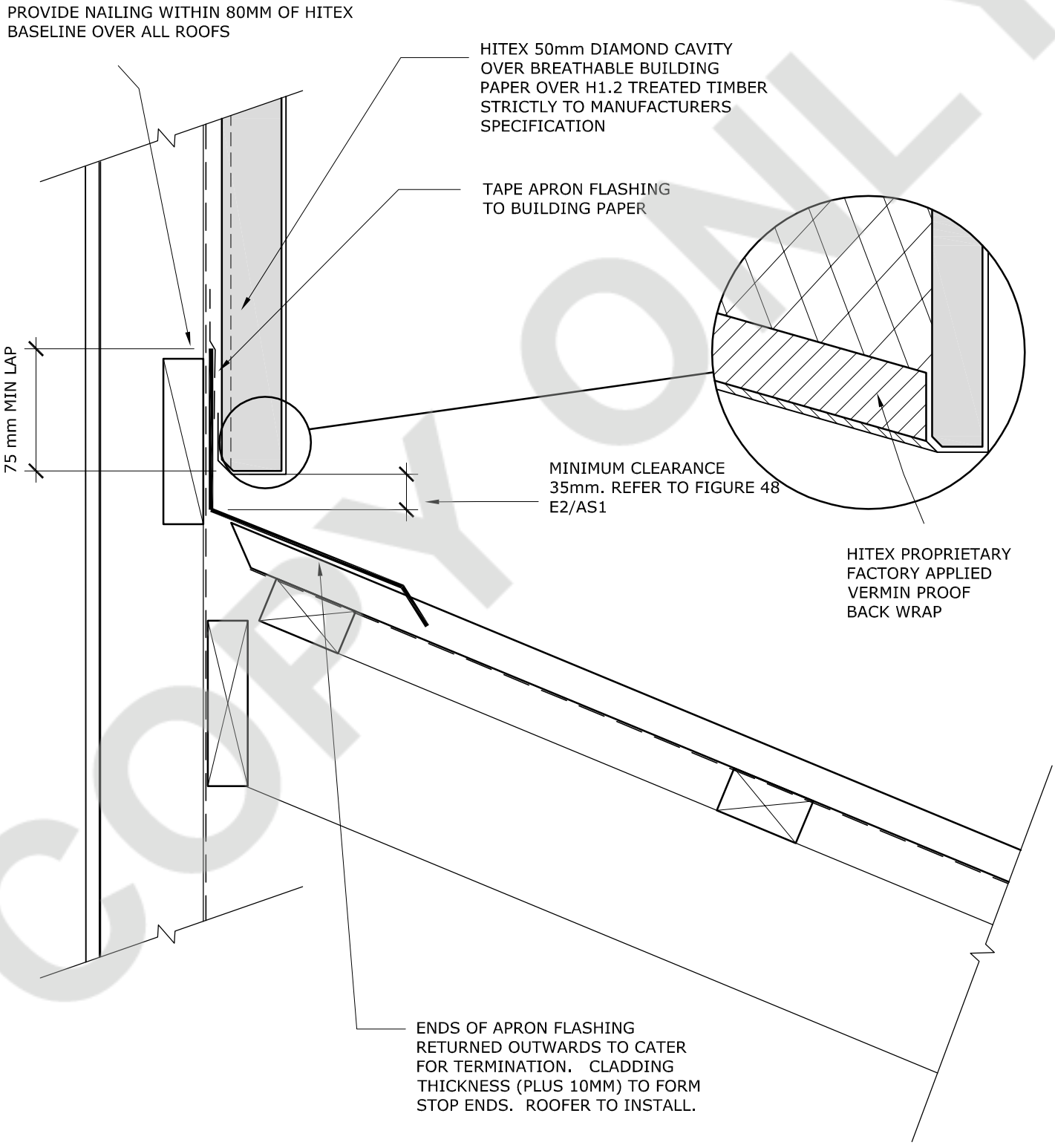
Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

NEGATIVE SLOPING SOFFIT

Not to Scale

DC50-WA-15 Ver 2



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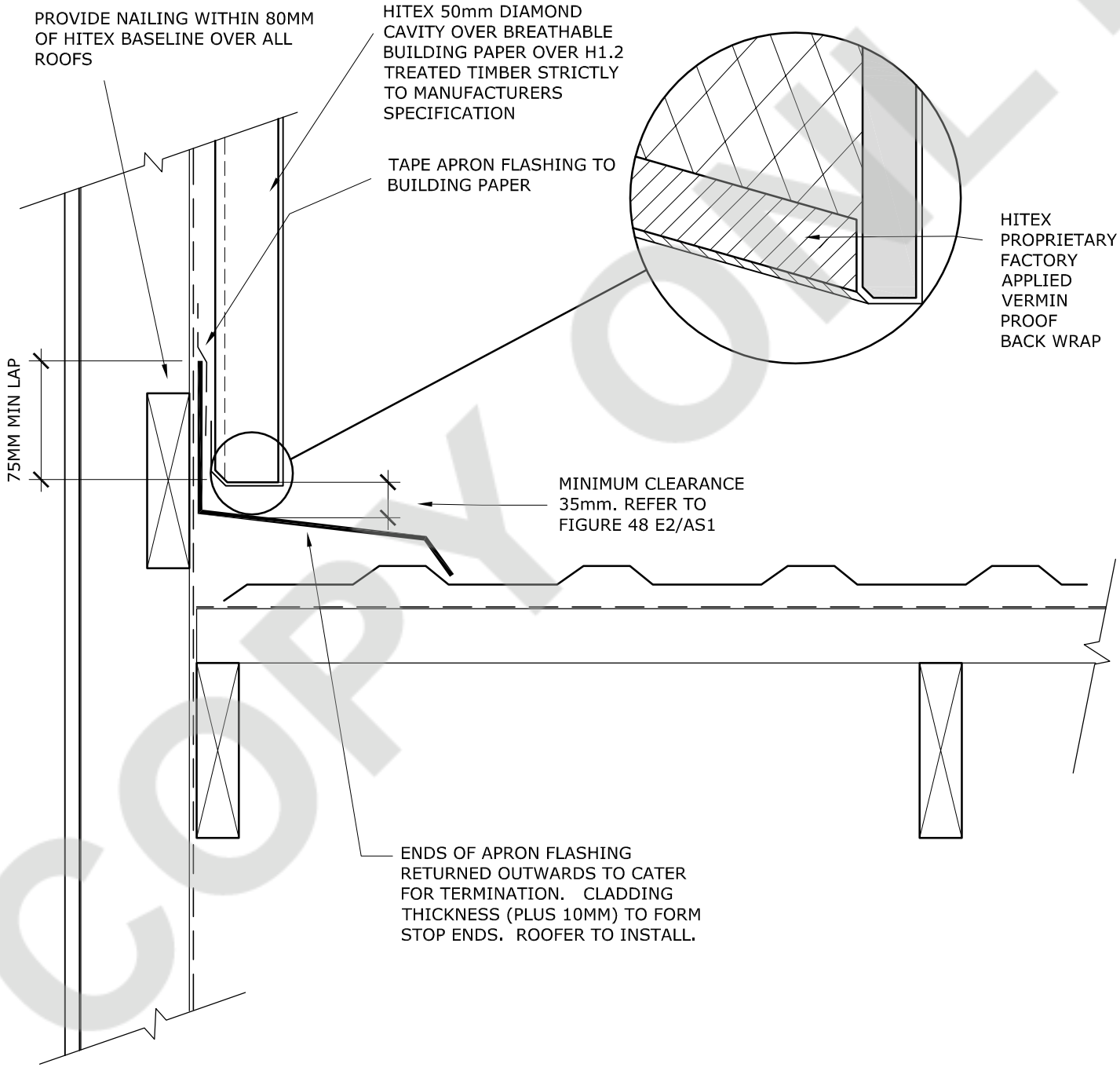
BUILDING SYSTEMS LIMITED

ROOF BASELINE FLASHING - I

Not to Scale

DC50-RO-01 Ver 2



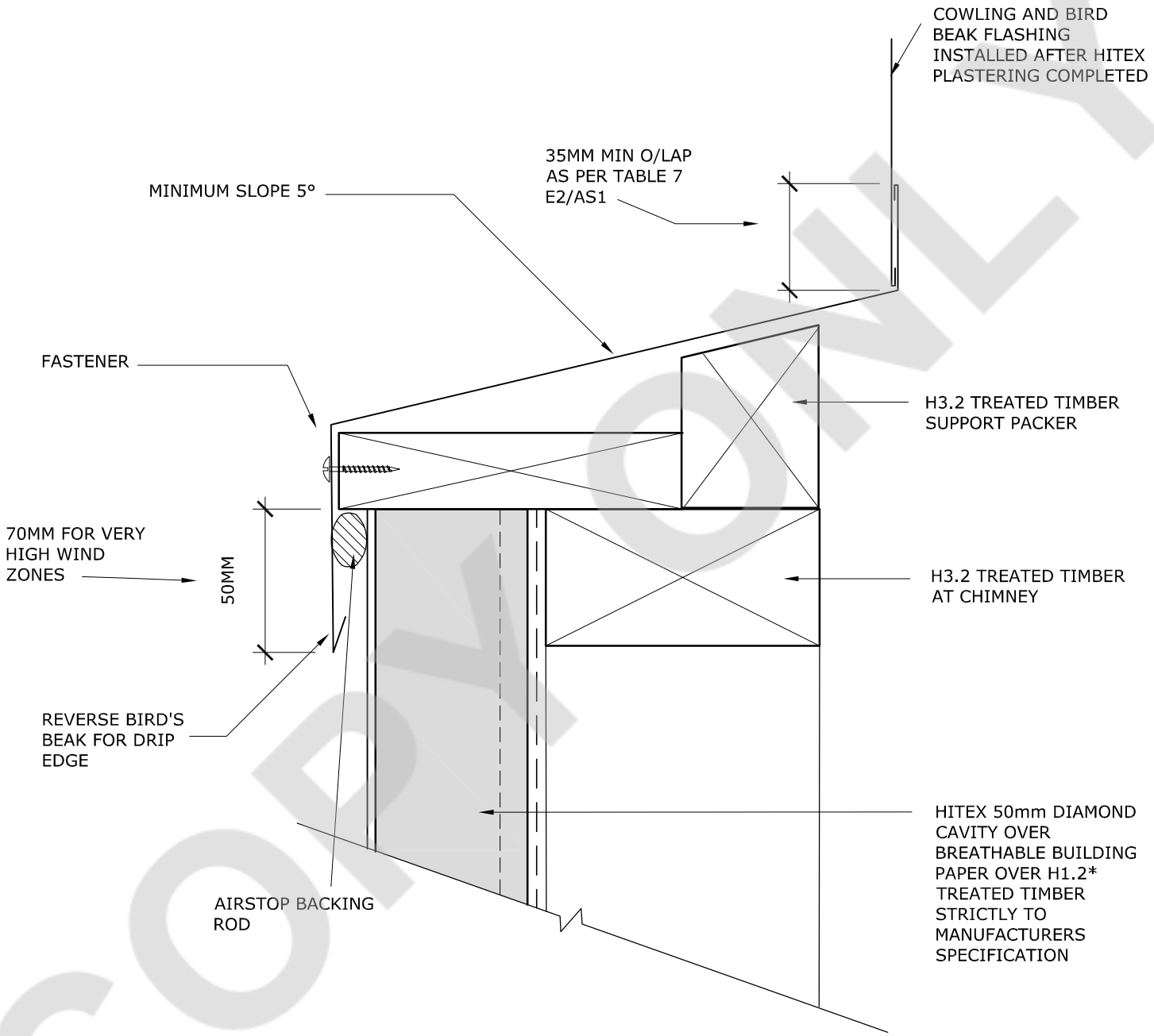
Please visit www.hitex.co.nz
for our latest drawings.

BUILDING SYSTEMS LIMITED

ROOF BASELINE FLASHING - II

Not to Scale

DC50-RO-02 Ver 2



* HITEX RECOMMENDS H3.2 TREATED TIMBER TO ALL HIGH RISK EXPOSED AREAS

* CHIMNEYS ARE HIGH RISK

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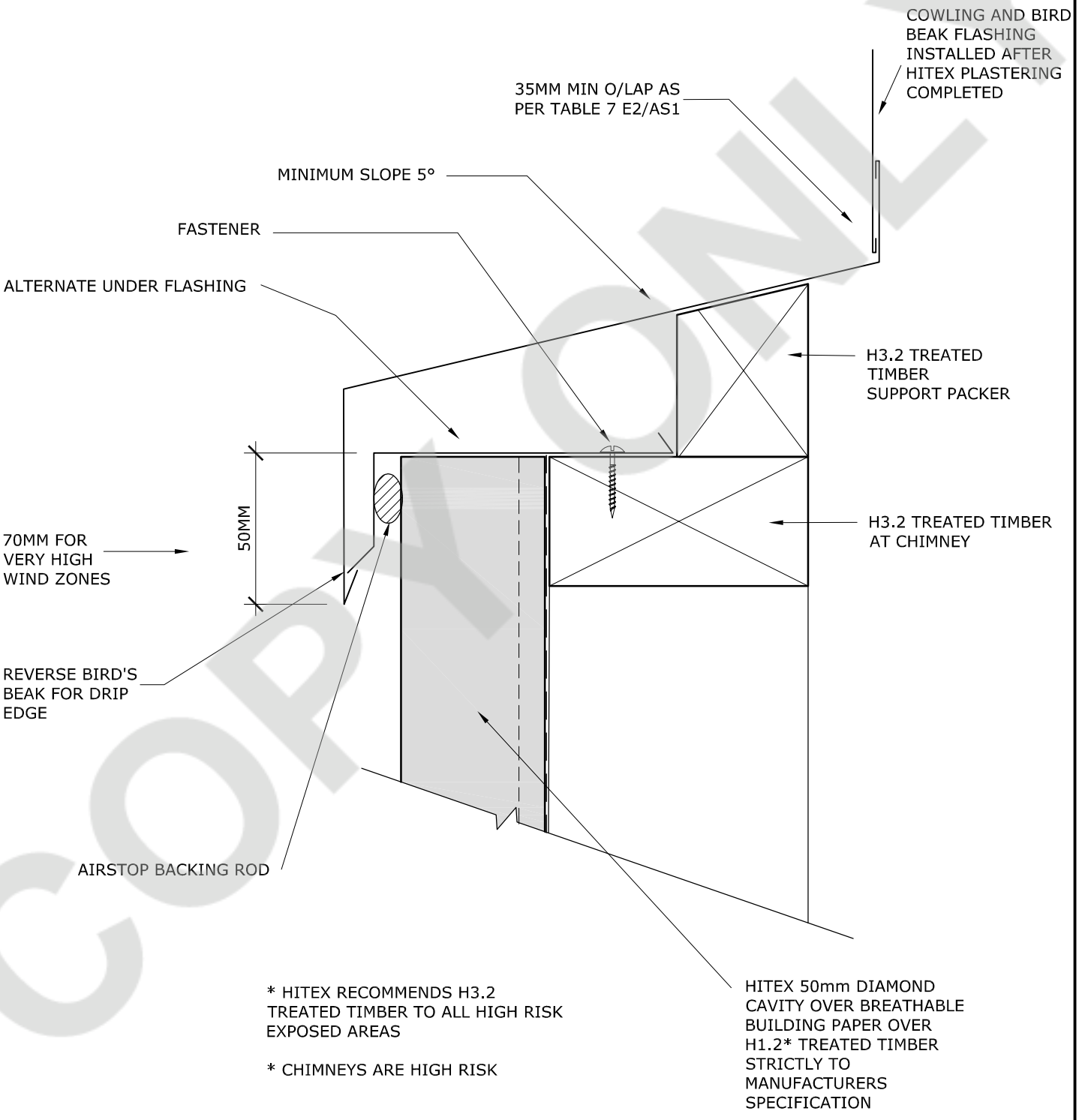
BUILDING SYSTEMS LIMITED

CHIMNEY CAP DETAIL - I

Not to Scale

DC50-PA-04 Ver 2



Please visit www.hitex.co.nz for our latest drawings.

BUILDING SYSTEMS LIMITED

CHIMNEY CAP DETAIL - II

Not to Scale

DC50-PA-05 Ver 2

HITEX DIAMOND EIFS CLADDING SYSTEM
PRODUCER STATEMENT

Issue Date: Version 4 14th August 2007
Issued By: Ian Holyoake, Managing Director

This Producer Statement summarises the critical points in supporting Hitex Diamond EIFS as a cladding system that complies with provisions of the New Zealand Building Code (NZBC). This Statement is in support of applications for a building consent or to establish that installation has been carried out to the appropriate standards and specifications.

Hitex Building Systems Ltd is the manufacturer of the Hitex Diamond EIFS Cladding System and has taken all reasonable steps including detailed research to verify the cladding (materials) and installation is fit for the intended purpose. Hitex is satisfied the performance requirements of the NZBC will be met if the cladding system is properly completed in accordance with the drawings, specifications and other documents issued by Hitex. It is understand that this Producer Statement, if accepted, will be relied upon by Building Consent Authorities for the purpose of establishing compliance with the Building Code.

HITEX DIAMOND EIFS SYSTEM

The Hitex Diamond EIFS system is a plaster cladding system as defined in the NZBC E2 External Moisture and as summarised within the attached document titled *Hitex Diamond and NZBC E2 Ext Moisture Specification May 2007* incorporating the following features:

- Polystyrene: Expanded polystyrene 38mm, 50mm, 60mm or 80mm thickness and 16kg/m^3 density made to AS 1366.
- Hitex Diamond has 15mm wide by 10mm deep interconnecting diamond pattern grooves cut at 60mm spacings in the back face of the polystyrene sheet.
- Hitex Diamond is a non ventilated cladding assembly (as defined by E2).
- Hitex Diamond direct fixed to *framing* over *building wrap* is an **Acceptable Solution** for Risk scores 0 – 6 determined using the building envelope risk matrix.
- Hitex Diamond fixed to framing over a 20 mm cavity, by use of battens, is an **Acceptable Solution** for Risk scores 7 - 20.
- Hitex Diamond direct fixed to framing is an **Alternative Solution** for Risk scores 7 – 20 . Research data including *in situ* monitoring of moisture contents in timber in external walls has demonstrated weather tightness including drainage and drying using moisture probes.

- The Diamond EIFS Cladding 50mm insulation Value: exceeds 1.5 (NZBC Acceptable Solution E3/AS1 paragraph 1.1.1(a) requires a minimum R-value of 1.5)
- Factory Applied Reinforced Plaster with layer of glass reinforcing and Polymer and Cement plasters factory applied to polystyrene sheets.
- Installation on site with mechanical fasteners and sheet jointing with Polymer plaster base coats.
- Decorative finishing and colour applications.

THIS PRODUCER STATEMENT COVERS THE FOLLOWING USES.
Where Hitex is intended to be used outside of any of the following scopes of work please consult Hitex for specific Producer Statements covering that work.

Location and Limitation of Use: Single and double storey timber and steel frame buildings up to very high wind classification areas.

Note steel frame houses are *alternative solutions*

Design Limitations: Hitex acknowledges that *specific weather tightness design* (SWD) such as decks, parapets, roof junctions, penetrations and some ground line clearances are at times incorporated into building designs. These increase the potential of weather tightness risk. Where Hitex is not the sole product supplier and the risk matrix exceeds 15 Hitex require these areas to be monitored with a Monitoring System utilising Mdu Probes.

Thermal Rating: Hitex Diamond EIFS cladding has a thermal rating of greater than R1.6 for 50mm system and > R1.9 for 60mm system. These R values do not diminish in time and are maintained after a leak or defect has been corrected.

Fire Considerations: Hitex Diamond EIFS cladding when coated with Hitex FRR (Fire Resistant Rating) plaster and assembled in accordance with the building consent fire ordinance from a suitably qualified fire engineer to meet the requirements for adjoining property fire risk as contained in AS 1530 pt 3.

Acoustic Properties: `Consult Hitex for any uses within these prescribed requirements.

Weather tightness of cladding system

Wall Moisture Management Principles within Paragraph 3 of E2/ASI dated 1 February 2005 and B1 of the NZ Building Act First Schedule.

The compliance of the Hitex Diamond EIFS cladding was assessed under five principles of wall moisture management.

Principle 1. Moisture Storage Capacity:
A wall section clad with Hitex Diamond EIFS was determined to have the capacity to store (absorb) the following volumes of water per square meter of building wall under the following conditions:

Ex MEWS 7 * Canadian Consortium for Moisture Management for Exterior Wall Systems No. 7	At 20°C 70%RH	At 20°C, 90%RH	If all Building Elements Saturated (100%+)
Hitex Diamond	.246 L	.365 L	.767 L
Wood (framing)	1.180 L	1.450 L	3.000 L
Plasterboard (lining)	.700 L	.770 L	4.025 L
Total	**2.126 L**	**2.585 L**	**7.792 L**

The MEWS research concluded that polystyrene cladding systems absorb the least moisture of the three wall systems (EIFS, fiber cement and stucco) and accordingly require different drying capabilities. The timber framing (and plasterboard) lining are separated from the cladding by a building underlay. This is critical to fulfilling the function of a drainage plane as a barrier to prevent moisture absorption.

Moisture getting into walls must be able to drain and any moisture that is absorbed in wall elements must be able to dry out.

Principle 2. Moisture effects on Properties of Wall assembly:
The Hitex Diamond EIFS is not susceptible to moisture uptake or increases associated with high RH or during rain periods considered normal for NZ climatic conditions (except snow). For timber frame construction a preservative treatment to H1.2 or H3.1 [1,2] is required to compensate for mild exposure to moisture through wetting during construction or for occasional wetting should their be minor defects in the cladding or other materials following construction or during prolonged high RH periods. Under expected

[1] As defined in NZS 3640:2003 and subsequent amendments
Chemical Preservation of Round and Sawn Timber
[2] The preservative treatment hazards classes for different building elements is provided in NZS3602:2003 Timber and Wood-based Products for Use in Building

normal ambient conditions the % MC of timber will be below 18% and RH below 70%. These conditions are below those which moulds grow. The Hitex Mdu program which monitors MC of timber *in situ* has confirmed this.

Principle 3. Fluctuating Temperature Gradients through Wall:
The Hitex Diamond EIFS is not affected by diurnal or seasonal temperature fluctuations. It also appears to insulate the timber framing from temperature changes that might otherwise lead to condensation on surfaces. Most finish colour ranges are possible for the Hitex Diamond EIFS cladding including dark colours (consult Hitex above 40).

Principle 4. Movement of Moisture through Wall:
The Hitex Diamond EIFS meets the requirements of the 4 D's of moisture control as described in the BIA News publication No.142 dated June 2004.

I Deflection of Water:

- The permeability of the Hitex Diamond EIFS cladding external surface as tested under 300mm of static water pressure is ≈5ml/m^2/hour.
  The limited permeability to moisture through the cladding surface is the first line of defense against moisture ingress.
- Flashings as detailed in Hitex design must be used including head, proprietary plaster jamb and sills and window under sill trays.
  Details are provided on the Hitex web site www.hitex.co.nz.
  These designs are to prevent moisture ingress through joins and penetrations of the cladding,
- Where details are planned that fall outside the scope of *Hitex Diamond and NZBC E2 Ext Moisture Specification May 2007 specific weather tightness designs (SWD)* must incorporate similar deflection principals and this requires consultation with Hitex Building Systems prior to the building consent process.

II Drainage of Cavity:

- The drainage efficiency of the Hitex Diamond EIFS cladding incorporating the integral cavity/drainage plane was measured at 100% (compared to fibre cement wall with battened cavity that drained 72%) on a 2.4m high

by 1.2m wide wall in a 4 litre test as reported in Hitex RB 409. This is the second line of defense against moisture ingress.

- All abutments (joins) to other claddings shall provide drained joint detailing
- All control joints allow for a minimum 20mm movement as evidenced by actual maximum building settlement.
- Minimum cavity clearance at any baseline is 30mm. Clearances less than this require monitoring
- Window head flashings are designed so as **not** to need pressure equalization
- Cavity airflow is not to be mixed with brick or stucco cavities which are wet systems. Separation of cavity air is required by blocking off those cavities.
- The Building papers are to be permeable.

III Drying Performance:

- The Hitex Mdu program of *in situ* monitoring of moisture contents in timber in walls clad with the Hitex Diamond EIFS has shown drying of construction moisture from above 20% mc down to compliant mc.
- Elevated moisture (> 20% mc) in the wall will dry out once the leak has been stopped as described in the Hitex Research bulletins 304, 305, 415 and 2004/6 microclimate analysis of In-situ Building Wall Constructions.
- Affects of moisture transport by rain are dampened by the Hitex Diamond Cavity. Where increased MC of timber occurs during prolonged wet periods the MC is returned to safe levels after the rain event by the positive Vapour Pressure differences and aspiration within the Hitex Diamond integral grooves.
- During rain events the RH% did not test above 80% in the Hitex wall.

Principle 5. Durability: Safety Factor over Time:

The Hitex Diamond EIFS cladding system is supported by a warranty to remain durable (fit for purpose) for 15 or 25 years minimum subject to normal maintenance as stipulated in the Hitex's Maintenance Manual.

The Hitex Diamond EIFS cladding can easily be replaced by removing or reinstating the affected areas.

Hitex requires the timber frame grade and preservative treatment (when required) and other components within the wall assembly to remain stable and durable given the above conditions and at all

times be of sufficient strength to hold the cladding fasteners and weight of up to 8kg m^2. The Hitex Diamond EIFS cladding has been designed to cater for midfloor contraction when control joints are incorporated.

Drawings and Details: Standard drawings are available on the Hitex web site www.hitex.co.nz under Architects/Drawings. Hitex maintains a library of more detailed SWD which can be accessed by contacting Hitex on info@hitex.co.nz. Where drawings are titled SWD (*specific weather tightness design*) the Council is to review each detail and site inspect.

Installation: Hitex is to be installed by licensed applicators and comply with Hitex Trade Practices publications and Audit inspection processes.

INSPECTIONS

The following minimum inspection shall be carried out for each installation of Hitex Diamond EIFS cladding:

(i) *Timber Frame and Ready to Start* pre-installation. Inspection to include the building wrap.

(ii) *Fixing release* inspection to cover correct assembly, joining and fixing of sheets. What about penetrations, flashings, SWD's etc yes if done at this stage??

(iii) *Final release* inspection to cover correct plaster and finish application.

(iv) *Advice of Completion of Building Works* to act as notification that the Hitex Diamond installation has been reviewed by Hitex.

WARRANTY

All Hitex Diamond EIFS cladding installations with duly completed "*Advice of Completion of Building Works*" shall be issued with Warranties by Hitex with any inclusions or exclusions duly noted.

MAINTENANCE

All Hitex Diamond EIFS cladding Warranty documents shall include prescribed maintenance needed for the Hitex Diamond to continue to meet the requirements of the NZBC.

It is an additional requirement that all house designs using Hitex Diamond having a risk matrix greater than 15 require review & authorisation by Hitex before proceeding. Hitex may during that

review require any house (including those over 15) to install a monitoring system. This does not preclude the existing E2/AS1 requirement to redesign a building or allow for specific design where the risk score is over 20.

Hitex operates a prescribed maintenance program. Any issues are to be communicated to Hitex according to this programme and procedures.

RECORDS

Hitex shall keep a hard copy of its inspection process, materials used, applicator, SWD details approved and any other relevant information deemed appropriate.

Other Technical Information: Hitex continues to update technical information covering a range of building situations. Please ensure information is current before use.

Yours faithfully

Ian Conrad Holyoake
MANAGING DIRECTOR

Referenced documents:

Relevant NZBC Clauses
Hitex Research bulletins 304, 305, 415
2004/6 microclimate analysis of In-situ Building Wall Constructions.
Hitex Diamond and NZBC E2 Ext Moisture Specification May 2007
Hitex Technical Bulletins
Hitex Trade Practice Manual
Hitex Maintenance & Warranty Manual
www.hitex.co.nz
www.moisturedetection.co.nz

MAINTENANCE MANUAL

WARRANTY AND MAINTENANCE MANUAL FOR HITEX CAVITY PLASTER SYSTEM

WARRANTY

	SERVICE RECORD
	Hitex recommend you keep a Record of the service undertaken on your home or building. This will show you have fulfilled your obligations as an owner.
Date	
	Hitex recommend a service at least every two years and before you sell your home.

Hitex is a registered trademark
www.hitex.co.nz

Your Colour is: _____

Hitex Texture Examples			
Spray Texture	**Flat Inbuilt Colour**	**Drag Inbuilt Colour**	**Adobe Finish**

Mark which texture is on your house

DEAR HOME OWNER...

This home owner's manual will help to ensure your investment in Hitex was a wise choice and that your home will continue to look good in the future. Read and follow these suggestions carefully for peace of mind. Remember that your home is clad in Hitex as this will assist you when you have your building valued and when you go to sell it.

INTRODUCTION

Hitex is the most technically advanced plaster system available today. We can make that claim because we have created the only plaster assembly with a factory applied, water resistant coating, locked in underneath the coating you see from the outside. Hitex Building Systems Ltd developed the first Cavity (refers to the Diamond Cavity researched at the Auckland University) Plaster Cladding that has scientifically proven drainage and drying mechanisms.

THE HITEX PLASTER SYSTEM

The Hitex plaster system consists of factory produced Hitex™ sheets that are fixed to the framing, (batten cavity system fixed to battens) providing a protective skin to the outside of the building. The composition of the sheets combine the thermal benefits of polystyrene, the water resistance of acrylics and the durability of glass and cement. Underneath is the Cavity which provides full drainage and drying mechanisms. Once fixed, the sheets are plastered on site to the desired texture. This is what makes Hitex durable and long lasting.

TIPS ON KEEPING YOUR HITEX PLASTER SYSTEM LOOKING GOOD...

REGULAR WASH

Mould or algae is common in NZ. Walls often pick up dirt, which makes the surfaces grubby and dirty. Remove this with regular hose-downs. More stubborn grime can be removed by detergent and warm water. If it persists; spray on an anti-mould and follow instructions to kill spores that get into the texture.

REPAIR ANY SEALANT MOVEMENT

Around windows, openings and pipes considerable movement can occur – sealant is used to accommodate this movement. If these crack or deteriorate, get them repaired, as this is where water may enter. Keep the plaster system in tip-top order by servicing the sealant.

REPAIR DAMAGE OR CRACKS

Damage and cracks may occur due to mechanical knocks or continual settlement of the house. These must be repaired to keep water out and to keep the plaster system looking good.

DAMP AREAS

Dampness causes dirt and moisture build-up that can cause rot in the wall itself. Keep trees, creepers, dirt, ground levels, piles of timber etc. clear of the Hitex at all times. Wet ground must be at least 150mm below the bottom of the Hitex to stop water being sucked up into the wall.

WINDOWS

Check the inside wall around and under the windows for signs of wetness. These areas need repairing by professional people if they are found to be wet.

MAINTENANCE...

NORMAL MAINTENANCE - HITEX PLASTER SYSTEM

As defined in NZBC B2 normal maintenance is maintenance that is expected to be needed throughout the life expectancy of the Hitex. This includes the following which are home owners costs.

- Inspect for and repair damage or chips caused by sharp objects.
- Inspect for and repair sealant lines or cracks around windows and doors. Timber movement is common and can cause stress cracks in unexpected places. Get these repaired.
- Inspect for and repair sealant lines around pipes and beams (penetrations and surface mounted objects).
- Inspect plaster and Hitex coating in **high exposure** areas; parapet tops, sloped walls and plaster sills. If damaged then get these repaired by professional Hitex people.

Do not expect others to do this work for you for free. It is your home.

NORMAL MAINTENANCE - PAINT SYSTEM

- Regularly wash down walls before winter/after winter. Detergents or anti-mould may be required.
- Inspect and repaint at least every 5 years to **high exposure** areas like parapet tops, plastered sills, sloped walls and paint close to the ground.
- Inspect paint and repaint to paint manufacturers specifications, normally one coat every 5-7 years.

LONGER TERM MAINTENANCE

If the condition of the paint is good and regular maintenance has been done, then nothing major should occur.

If you have some reservations about certain areas, phone Hitex and we will come and inspect and offer advice. Over an extended time period, some parts of the cladding may need rework, especially the **high exposure** areas on timber framed walls. The more regular you look after your home, the less likelihood there will be of extensive rework in the future, or the likelihood of decay to the timber behind the Hitex cladding. Phone Hitex to organise your maintenance works. By calling Hitex first, you will avoid upsetting the terms of your warranty.

Important Notice: Always repair leaks immediately as damage, especially rot to timber, can be extensive.

LOOKING GOOD...

PAINT AND COLOURED COATINGS

Re-paint these areas before the end of their serviceable life (serviceable life = time the colour maintains its aesthetic quality). By delaying the repaint for longer than its serviceable life will mean the re-paint will cost more as it will need to be primed first.

WALL ATTACHMENTS

Make sure any wall attachment (only screws or bolts) are secured back into the studs and have spacers sealed to the plaster so when the brackets are done up tight they DO NOT pull or squash the plaster assembly. Holes in walls, are potential areas where water can get in and cause damage. Keep a watchful eye on them.

NO FIRES OR DIRECT HEAT

Do not light fires or apply direct prolonged heat to the plaster system as the paint will blacken and the polystyrene behind may melt.

NO SOLVENTS

Do not wash the walls with solvents as these will attack the paint and soak through the plaster and melt the polystyrene.

CARE WITH LADDERS AND BALLS

Ladders must have protective wrapping on the legs and keep ball bouncing to a minimum to prevent dents in the plaster.

WARRANTY

Important: For this warranty to be valid, the detachable form must be signed and returned to Hitex, before code compliance is issued for the building. The effective date the warranty begins is the day plastering works are completed.

HITEX PLASTER SYSTEM
PRODUCER STATEMENT

Hitex states that Hitex Cavity Plaster Assembly and Hitex FR FRR Cavity Plaster Assembly (Hitex FR EIFS Plaster Assembly has achieved an Ig = 0 in test to AS1350.3), when erected and finished in accordance with the current “Hitex Trade Practices” using Hitex Star Warranty contractors and employees, is suitable for exterior cladding in accordance with acceptable solution C3/AS1 for the following structures.

Purpose groups SC SD SA and SR up to 7m high
All other purpose groups less than 1m from boundary up to 25m high
All other purpose groups greater than 7m from boundary no height restriction

Hitex also claims that the Hitex Cavity Plaster System, when maintained in accordance with the current Hitex 'Maintenance Manual' will satisfy the following requirements of the NZ Building Code

B1 structure
B2 durability (15 years)
E2 external moisture
E3 internal moisture (health and safety)
F2 hazardous materials
H1 Energy efficiency (R1.5 min)

This statement does not constitute that the Hitex has been installed correctly. Refer to the Applicator's Advice of Completion for such claim.
You are required to return the enclosed detachable warranty acknowledgment form to this address with a copy of the Applicator's Advice of Completion attached:

Applicator is:

HITEX STAR WARRANTY

The Hitex Cavity Plaster System will:

Perform to the requirements of the building code for a minimum of 15 years provided normal maintenance is undertaken. Refer to the guidelines in the Hitex Maintenance Manual.

Complies with the Hitex Producer Statement.

Has been completed in accordance with the Applicators Advice of Completion.

This warranty is transferable to new owners on the basis they accept the responsibilities contained in the Hitex Maintenance Manual.

Hitex Building Systems Signature:

Date:

Important: For this warranty to be valid, one copy must be signed and returned to Hitex indicating the owners acceptance of its terms and maintenance requirements. The effective date the warranty begins is the day plastering works are completed.

Owner:

Address:

Owners signature as acceptance of the Terms of Warranty.

Date:

Star Warranty

The Applicator warrants the Hitex Cavity Plaster System has been correctly installed in accordance with Hitex Trade Practises (unless noted on the "Advice of Completion") using Hitex manufactured products mixed and applied to correct specifications.

Applicator:	Signature:	Date:

If this house was painted by others you should get their separate warranty to cover that work for 5 years.

CONDITIONS:

Subject to any right which cannot be excluded by law, Star Warranty or any liabilities or representation as to the quality of fitness of these are expressly null and void if subject to fire, building settlement, earthquakes and acts of god, or other components of the building letting water behind the Hitex causing decay, or where the owner has failed to carry out maintenance as laid out in the Hitex Maintenance Manual.

Any claim under this warranty must be made within a reasonable time to minimise damage. Hitex may elect to rectify or replace the affected area.

Warranty claims are based upon progressively reducing value based upon 100% for 10 years and pro rata reduction of 20% for the next 5 years.

No warranty is assumed or implied for claims to replace timber that has not been treated to resist fungal decay.