ITI Timspec

V5 - 2021

CERTCLAD

Innovative Timber Ideas

www.ititimspec.nz

Installation Manual

Bevelback Cavity System

Radiata Pine

BC-RP-IM-V5

IMPORTANT

This Installation Manual (IM) is specific to
RADIATA PINE (RP) and BEVEL BACK cavity system (BC) profile only.

S**pecific drawings** in this Installation Manual can be found at the back.

There are 9 CertClad Installation Manuals in the following profiles and timber species. Profiles are Bevel Back, Vertical Shiplap and Rusticated. The timber species are Accoya, Western Red Cedar and Radiata Pine.

CertClad is a certified installation system and supplied by ITI Timspec.

You can find these documents on our website www.ititimspec.nz/downloads. If you have any questions, please feel free to contact us. Auckland office (09)620-0260 or technical@ititimspec.co.nz

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1 SCOPE

1.1 INTENDED USE

This Bevelback Weatherboard Cavity System has been designed for use as cladding for residential and light commercial buildings. It is suitable for buildings with a 'Risk Score' of 0 - 20 Calculated in accordance with New Zealand Building Code (NZBC) Clause E2/AS1 Table 1 and Wind Zones up to and including extra high.

1.2 VALIDITY

Cerclad is only valid when all products in the weatherboard system are as listed in the product certificate and in this manual. This is to ensure that all products meet the requirements of Certclad and are installed in the correct manner.

1.3 PERFORMANCE

When installed and maintained as specified in this manual and the work is done by a qualified tradesman using accepted trade practices, it will meet the applicable sections of the following requirements of the NZBC (New Zealand Building Code):

- B1 Structure
- B2 Durability
- E2 External Moisture
- F2 Hazardous Building Materials

1.4 LIFESPAN

1.4.1 SERVICEABLE LIFE

ITI Timspec Radiata Pine is warranted for between 15 – 40 years depending on coating selected.

This serviceable life is subject to the coating and maintenance requirements below. More *importantly*, some timber boards may require replacement over the lifetime of the cladding as part of normal maintenance.

1.4.2 COATING REQUIREMENTS

For H3.1 or H3.2 treated Radiata Pine with a dressed surface, all faces (hidden and exposed) must be paint finished, consisting of two coats of an approved primer and all exposed faces coated with a further two coats of a suitable topcoat, refer to chapter 4.3 (Priming and Sealing, page 7) and 6.2.4 (Coating, page 8) for more detail.

1.4.3 MAINTENANCE REQUIREMENTS

When a coating is applied, periodic maintenance and recoating is required to ensure the integrity of the coating is sustained. This will generally mean applying another exterior coat every 10 years dependent on the coating used and building location after washing and maintenance.

Please refer to the On-Going Maintenance section 12 (page 18) for more information about the required maintenance.

2 HEALTH AND SAFETY

2.1 CUTTING OF TIMBER

Cutting of timber is to be done in a well-ventilated area and a suitable dust mask, eye protection, and ear protection must be worn.

2.2 COATING AND PRIMING

Coating and priming are to be done in a well-ventilated area, refer to the coating/primer supplier for all matters relating to health and safety. All relevant sections of AS/NZS 2311:2009 (Guide to the painting of buildings) and all of the coating manufacturer's requirements must be adhered to.

Contact Information is technical@itimspec.co.nz; (09) 620-0260 or www.itimspec.nz

3 SITE PREPARATION

3.1 STRUCTURE AND FRAMING

3.1.1 NEW ZEALAND STANDARD 3604

Generally, the timber framing must comply with NZS 3604 (2011) (Timber-framed buildings), however, where specific engineering design is required the framing shall be at least of equivalent stiffness as the framing provisions of NZS 3604 (2011).

3.1.2 LAYOUT

Studs must be at spaced at a maximum of 600mm between centres. Dwangs (nogging) must be spaced at maximum 800mm between centres. Studs and Dwangs must form a flush plane for cavity battens and weatherboards to be fixed to.

Additional framing may be required at soffits, corners, and penetrations such as window and door openings to support the installation of battens and flashings.

3.1.3 MOISTURE CONTENT

The optimum moisture content of the weatherboards is between 16 - 18%. The moisture content must not exceed 20% at the time of fixing as problems may occur with the coating adhesion.

3.2 BUILDING UNDERLAY

3.2.1 MATERIAL

Building underlay and Rigid wall underlays must comply with properties stipulated in NZBC Clause E2/AS1 Table 23 (Properties of roof underlays and building underlays) or equivalent proof of compliance to NZBC.

3.2.2 INSTALLATION

Building underlay to be installed in accordance with underlay manufacturer's specification, and in accordance with conditions set out in NZBC Clause E2/AS1. 9.1.7.2.

4 PRE-INSTALLATION

4.1 ON-SITE STORAGE AND HANDLING

Care must be taken to ensure that timber and accessories are kept clean and dry, and are not damaged whilst in storage awaiting application.

Extra care is to be taken while handling timber to ensure that it is not damaged.

Timber is to be stacked on flat level bearers/dunnage that is a maximum of 900mm apart and at least 100mm off the ground. Timber should either be stored inside an enclosed building or covered with an additional waterproof layer and protected from the elements when stored outside

IMPORTANT Radiata Pine weatherboards should not be installed if their moisture content is above 20%.

4.2 DOCKING OUT DEFECTS

Before coating or installing boards, check for any defects that may require docking out.

IMPORTANT All docked ends, any exposed or bare timber of painted weatherboards will require end sealing with a minimum of two coats of primer.

4.3 PRIMING AND SEALING

Apply the first coat of primer to all sides and edges of the weatherboard prior to installation. It is critical that Radiata Pine is at the correct moisture content prior to priming. Remember that all docked ends will require priming as noted above. Follow the coating manufacturer's directions and ensure further coats are applied as required. All relevant sections of standard AS/NZS 2311 (Guide to the painting of buildings) must be adhered to.

5 MATERIALS - CAVITY SYSTEM COMPONENTS

5.1 CAVITY SYSTEM COMPONENTS

All cavity system components must be supplied by, or approved by ITI Timspec. This is to ensure that all items are up to a suitable standard and to ensure the compatibility and suitability of all items. Any alternative or competitor supplied product will invalidate the Certclad Warranty.

5.2 TIMBER SPECIES: RADIATA PINE

5.2.1 MATERIAL

New Zealand grown Radiata Pine (Pinus Radiata) which has been preservative treated to a minimum H3.1 (ACQ, CCA, etc.) level.

5.2.2 DURABILITY

ITI Timspec Radiata Pine is warranted for between 15 – 40 years depending on coating selected.

The above Warranty assumes regular maintenance. Please refer to the On –Going Maintenance Section 12 for more information.

Please note, some timber boards may require replacement over the lifetime of the cladding as part of normal maintenance.

5.2.3 COATING

Dark colours attract more heat which will exacerbate any timber movement and/or resin bleed. Therefore only coatings which have an LRV (light reflectance value) of 45% or higher can be used. Any coating that has an LRV less than 45% will void the warranty.

5.2.4 IMPORTANT NOTES

Timber treated with a copper-based treatment (ACQ, CCA, etc.) should not be in contact with metal wall claddings as this may lead to corrosion. Separation is required in the form of an approved DPC.

Material selection to be in accordance with NZBC Clause E2/AS1 Table 21 compatibility of materials in contact and Table 22.

5.3 RADIATA PINE BEVELBACK WEATHERBOARDS

Radiata Pine can be machined into a variety of profiles, including the range of Bevelback weatherboards as listed on our Website.

5.3.1 COATING DRESSED AND/OR TREATED WEATHERBOARDS

H3.1 or H3.2 treated painted finish Radiata Pine must have a dressed surface and must be coated with two coats of primer and two further coats of a suitable alkyd or 100 percent acrylic paint. All relevant sections of standard AS/NZS 2311 (Guide to the painting of buildings) should be adhered to.

All cut ends must be coated with a minimum of one coat of primer before installation. Immediately after fixing the weatherboards, all nail holes should be spot-primed and filled, and sanded smooth prior to painting.

As soon as possible after fixing the weatherboards they should be over-coated with a minimum of two coats of suitable exterior grade premium paint. Follow the paint manufacturer's directions specification.

If the weatherboard has been exposed to the elements for an extended period of time (generally 4 weeks) or if there is evidence of the primer "chalking", then re-priming will be necessary. This involves sanding the primer back to a sound surface and re-priming using a premium oil based primer such as Resene True-Prime or Dulux Ultra-Prime.

5.4 FLASHINGS

5.4.1 MATERIAL

Flashings can be either: Galvanised Steel, powder coated Aluminium, Stainless Steel (304), or uPVC.

All flashings to comply with NZBC Clause E2/AS1. 4.0 and Table. 7.

If using galvanized steel flashings these must not be use indirect contact with CCA treated weatherboards in a sea spray zone or corrosion zone D.

IMPORTANT Weatherboard fixings are not to penetrate flashings as this may provide a path for water to track through.

5.5 NAILS

5.5.1 MATERIAL

Nails shall be either Stainless Steel (304) or in corrosion zones, Stainless Steel (316).

5.6 CAVITY BATTENS

5.6.1 MATERIAL

Minimum H3.1 treated Radiata Pine or Polypropylene (Cavibat).

5.6.2 DIMENSIONS

Battens are 45 x 18 mm.

Cavibat battens have been appraised by BRANZ as a non-structural batten for wall cladding systems.

Refer to E2/AS1 – Section 9.1.8.4

Refer to BRANZ Appraisal No. 524 [2007] for information about Cavibat, including its limitations and specifications.

6 MATERIALS - ACCOMPANYING ELEMENTS

6.1 ACCOMPANYING ELEMENTS

All items that precede the installation of the weatherboard system (building underlay, roofing underlay, flashing tape, etc.) and all consumables and items successive to the weatherboard system (PEF backing rods, flexible sealants, etc.) will not be supplied by ITI Timspec as these are outside the scope of this specification. These items still require careful evaluation to determine their suitability and still play a critical role as part of the cladding system.

IMPORTANT It is the builder's responsibility to ensure that all these accompanying items meet the requirements and properties stated and more *importantly* are compatible with adjacent materials and are fit for the intended purpose, and comply with the relevant clauses of the NZBC.

6.2 TIMBER FRAMING

Timber framing must meet the requirements of NZS 3604 (2011) (Timber-framed buildings), or where an alternative framing product is used (such as steel framing) strength and stiffness must be equal or greater than the performance requirements as set out in NZS 3604 (2011).

6.3 BUILDING UNDERLAY

The building underlay used must also meet all the requirements stated in NZBC Clause E2/AS1 Table 23 (Properties of roof underlays and Wall Underlays). ITI Timspec recommend Sikaflex AT Fascade.

A Rigid Wall Underlay is required for EH wind zones.

6.4 FLASHING TAPE

The flashing tape used must meet all the requirements stated n NZBC Clause E2/AS1 section 4.3.11 with a valid BRANZ Appraisal or CodeMark and suitable to be used with the wall underlay selected.

The flashing tape must be compatible with all materials that it is in contact with, specifically the building underlay.

The building underlay used must also meet all the requirements state in NZBC Clause E2/AS1 Table 23 (Properties of roof underlays and Wall Underlays).

6.5 SEALANTS AND ADHESIVES

6.5.1 MODIFIED SILICONE OR CO-POLYMER CONSTRUCTION SEALANT

All construction Sealants are to be a modified silicone with a valid BRANZ Appraisal or CodeMark.

6.5.2 SELF-EXPANDING POLYURETHANE FOAM

All Self-expanding foams must be rapidly expanding polyurethane foams that bonds with all materials that they will come into contact with. The foams must not shrink and must cure to an airtight, moisture resistant seal.

6.6 PEF ROD

PEF backing rod must be closed cell polyethylene foam complying with E1/AS1 section 9.1.6.

It should have a diameter 25% larger than the gap width and should be pushed into the gap with a blunt tool.

6.7 METER BOX

Meter box penetrations have a higher risk of water ingress, and as such all possible steps should be taken to minimise this risk. A good quality meter box manufactured by a leading NZ supplier will certainly help this.

Meter boxes are to be manufactured from aluminium, hot-dipped galvanised steel, glass-reinforced plastic or other suitable rigid, UV resistant, non-combustible material. They also must be coated on the inside and outside surfaces with a material giving a hard, durable finish providing a service life of not less than 20 years.

The door must have a troughed lip around the front perimeter and if a drain is present is should be made in a way to minimise water entry.

6.8 INTERNAL LINING

Internal Linings must be of a suitable size and material to provide bracing where needed and to act as an adequate barrier to air flow.

7 INSTALLING CAVITY BATTENS

7.1 CAVITY CONSTRUCTION

7.1.1 COMPLIANCE

Cavities must comply with NZBC Clause E2/AS1 paragraphs 9.1.8 to 9.1.9.4.

7.1.2 PRECAUTIONS

As solvents in LOSP treatments can affect bitumen based building papers, it is necessary to fillet stack LOSP treated timber for 7 days after treatment to ensure that solvent has evaporated before contact with any bitumen-based building paper.

7.1.3 FIXING (NON-STRUCTURAL) CAVITY BATTENS

Cavity battens are to be fixed over underlay to the studs with extra vertical battens to corners to support flashing when required.

NOTE Fixing is only temporary for cavity battens as the weatherboard fasteners are used to permanently fix the batten.

7.1.4 TOP OF WALL DETAIL

No ventilation shall be provided at the top of the cavity. Use a horizontal D4S profile (not a Cavibat batten) at the top of the wall to close off the top of the cavity. This prevents damp air circulating from the cavity space into interior spaces such as roof framing or eaves and is extremely *important* where the cavity finishes beneath an area that is open to a roof space (such as a wall finishing under a soffit).

7.1.5 BOTTOM OF WALL DETAIL

Use a ‘Cavity Base Closure Flashing’ at the bottom of the wall to allow drainage and ventilation but prevent the entry of vermin. This also applies where cavities end over a window, door or another opening. Ensure building underlay laps over rear upstand of the cavity base closure or use flashing tape to seal the top of the cavity base closure to the building underlay. An angle packer (or part board) may be required to support bottom of lower weatherboard.

8 FIXING DETAILS FOR WEATHERBOARD

8.1 INSTALLATION

8.1.1 FIXING METHOD - BEVELBACK WEATHEBORDS

Ensure correct nails are selected in accordance with the nail selection chart 8.1.2. below.

Nail placement is to be 35 - 40mm up from bottom edge of weatherboard. The nail must not penetrate the underlapping (lower) board. Nail shank must be annular grooved.

Pre-drill all nail holes using a bit that is 0.3 – 0.5mm smaller than the nail shank to prevent splitting, and ensure a snug fit.

Nail on an upward angle to prevent water running down the nail through the cavity.

Ensure nail shank has a minimum framing penetration of 35mm for painted weatherboards.

Hand-drive all nails. Gun-driven nails should not be used as they may damage the surface of the timber or cause splitting or crushing damage in the battens.

Flat head, pentagon head or crown head nails to finish flush onto, but not into, the face of the weatherboard.

Jolt head nails must be punched just below the surface, spot primed and filled using a two-part high quality non-shrinking filler, and sanded smooth, prior to painting.

Ensure weatherboards are set out to achieve correct 32mm overlap at join.

One board on any given wall elevation may need to be cut down to fit wall height. Do not extend or reduce the 30mm lap requirement or ‘creep’ the boards to fit.

8.1.2 NAIL SELECTION CHART

Weatherboards	Nail Size	Material	Nail Head	Nail Shank	Minimum Framing Penetration
Painted	90 x 4.0 mm	Stainless Steel (304 or 316) Silicon Bronze	Jolt head	annular grooved	to achieve minimum 35mm framing penetration

Refer NZBC Clause E2AS1 Table 24

Fixing lengths need to increase when installed over a rigid wall underlay to ensure minimum penetration of fixing into the stud.

9 INTER-STOREY CAVITY JUNCTION

9.1 DEFINITION

Cavities may be continuous up to two storeys or 7m in height (whichever is the lesser). Walls over this height require an inter-storey junction to drain the cavity.

10 WITHIN-BOARD JOINS (SCARF JOINT)

Use a within-board joint to join two shorter weatherboards together, to cover full wall width.

10.1 LIMITATIONS

A within-board join should not be placed where it is directly adjacent to another join, a junction, a corner or a penetration i.e. stagger joins across the wall.

10.2 METHOD

Weatherboards may be joined by scarfing two boards together over a batten. Cut boards with a minimum 30-degree angle. Use an appropriate adhesive to bond the boards together and nail through the overlapping board only. The nail should be 30mm from the edge of the join to avoid hitting the underlapping board. Care should be taken to select and use two boards that are similar in grain and appearance, and that have equal moisture contents; otherwise, one board may shrink or expand at a differing rate putting stress on the joint.

11 SITE CLEAN-UP

11.1 AT COMPLETION

Upon completion, the installer is to leave the site in a clean and tidy manner, including:

1. Replacing or repairing any damaged or marked items; and
2. Removing all rubbish, debris and unused items from the building site.

Any treated and/or coated timber off-cuts (e.g. cavity battens) or rubbish are to be disposed of in accordance with local council requirements.

12 ON-GOING MAINTENANCE

It is the building owner's responsibility to ensure that the cladding system receives regular maintenance so that it continues to perform at its required level.

12.1 MAINTENANCE INTERVAL

Maintenance should be called up at least annually, and more often in aggressive environments – coastal, industrial, and geothermal as appropriate.

12.2 MAINTENANCE REQUIREMENTS

Regular maintenance is to include the following 5 steps:

1. Wash all exterior surfaces with low-pressure water to remove dust, dirt and other contaminants;
    a. Extra attention should be given to areas that are not exposed to rain such as sheltered areas below eaves;
    b. Do not direct high-pressure water at any part of the cladding system as this may damage the timber surface. Take care especially around sensitive junctions such as joinery surrounds and other flashings where you must avoid forcing water past anti-capillary gaps and flashings into the wall cavity.
2. Use a soft bristle nylon brush or broom with water and an appropriate cleaning agent (refer to paint manufacturer for correct cleaning agent specific to their paint system) to remove stubborn or persistent dirt and surface contaminants. Rinse thoroughly with water after the cleaning operation to remove any excess cleaning chemicals. **DO NOT** use aggressive cleaning chemicals.
3. Inspect all surfaces and junctions for signs of damage, wear-and-tear, or coating breakdown. Where coating surface has broken or eroded remedial action is required in accordance with the requirements of the coating manufacturer.
4. Repairing or replacing any damaged or deteriorated items in order to preserve the weather tightness of the building:
    a. Small isolated areas of dry rot (highly unlikely) in timber can be cut out and filled then primed and coated;
    b. For larger areas of deterioration: remove and replace either the damaged section or the entire board for any deteriorated timber boards (includes scribers, cover boards and weatherboards). Prime and coat the replacements as required;
    c. Other items (soakers, flashings and capping's) may need to be replaced in their entirety.
5. Where a coating is applied, periodic recoating is required to ensure the integrity of the coating is sustained. This will generally mean applying another exterior coat every 4 to 10 years (dependent on the coating used and building location) after washing and maintenance.

13 CONSTRUCTION DETAILS

FIGURE 13. 1 BC 106 PAINT FINISH WITH STANDARD CAVITY FIX

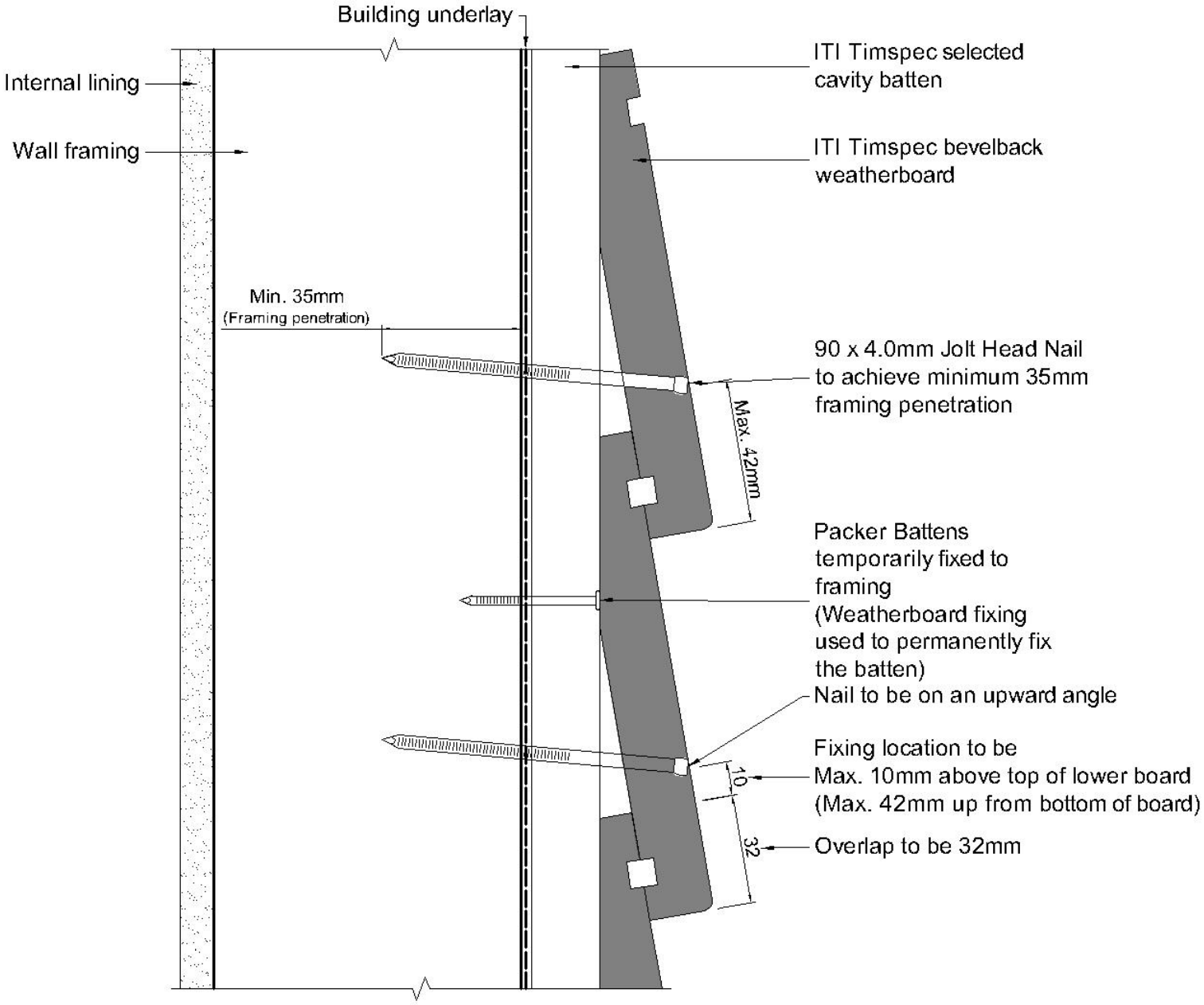


FIGURE 13. 2 BC 108 STAIN FINISH WITH STANDARD CAVITY FIX

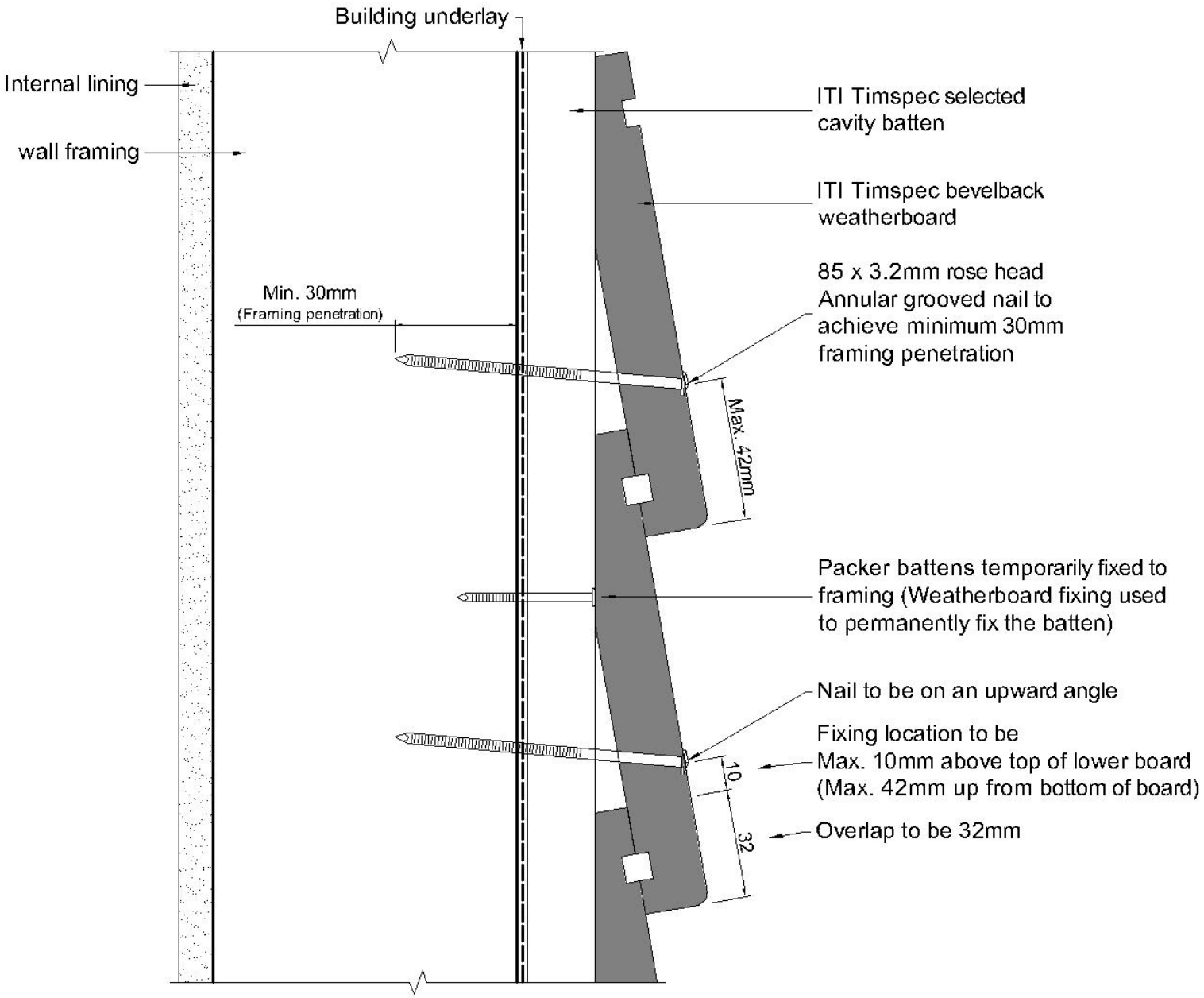


FIGURE 13. 3 BC 201 WINDOW HEAD – ALUMINIUM JOINERY

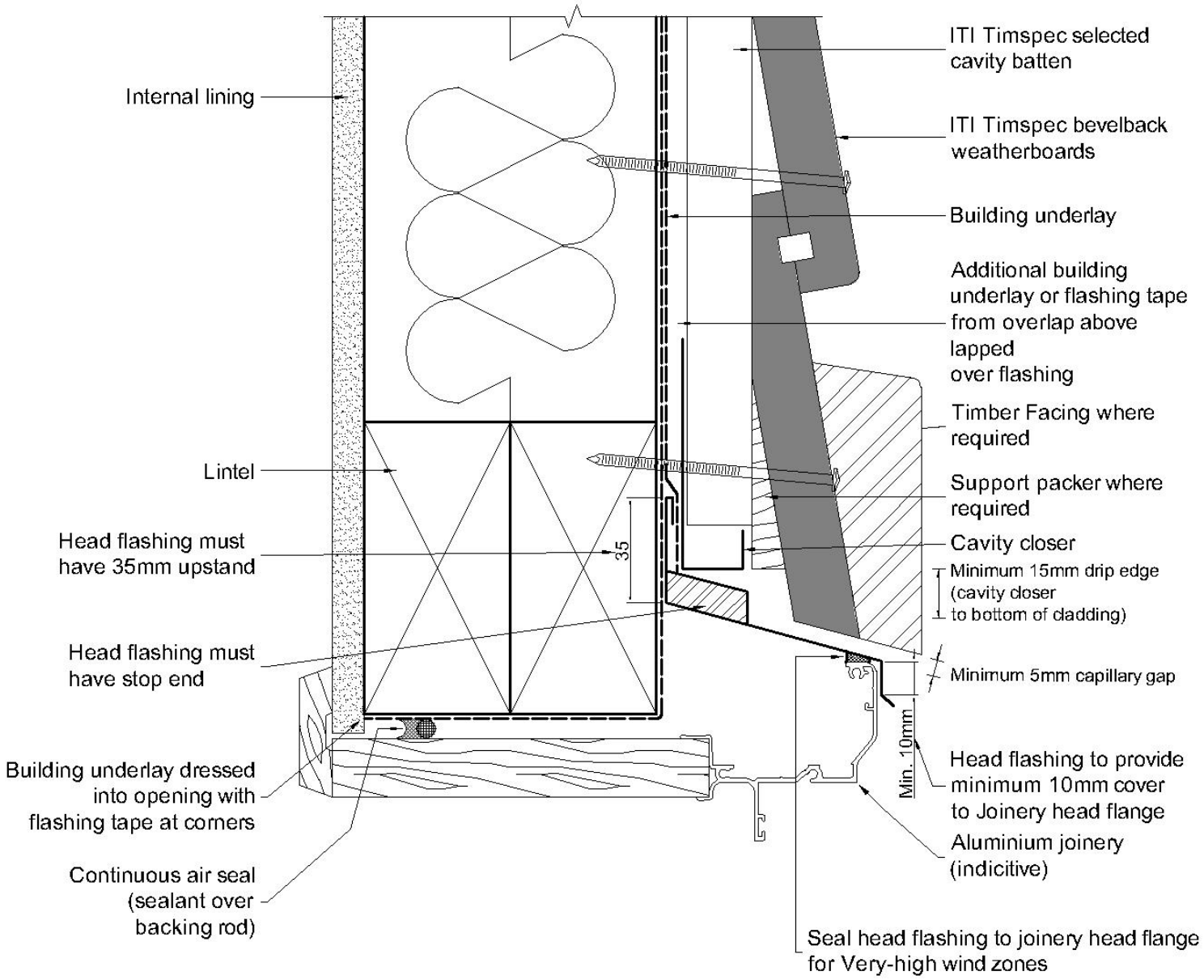


FIGURE 13. 4 BC 202 WINDOW JAMB – ALUMINIUM JOINERY

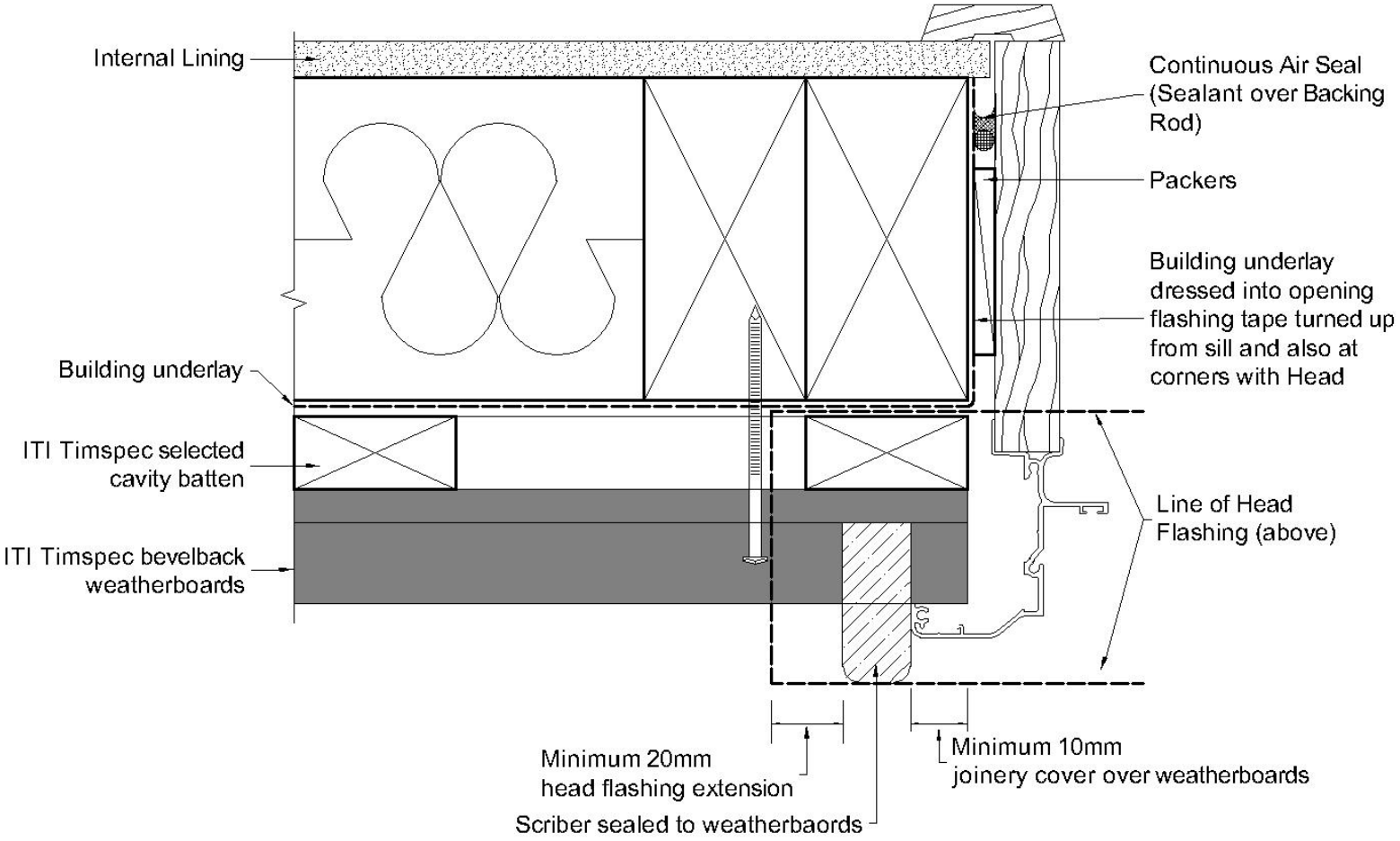


FIGURE 13. 5 BC 203 WINDOW SILL – ALUMINIUM JOINERY

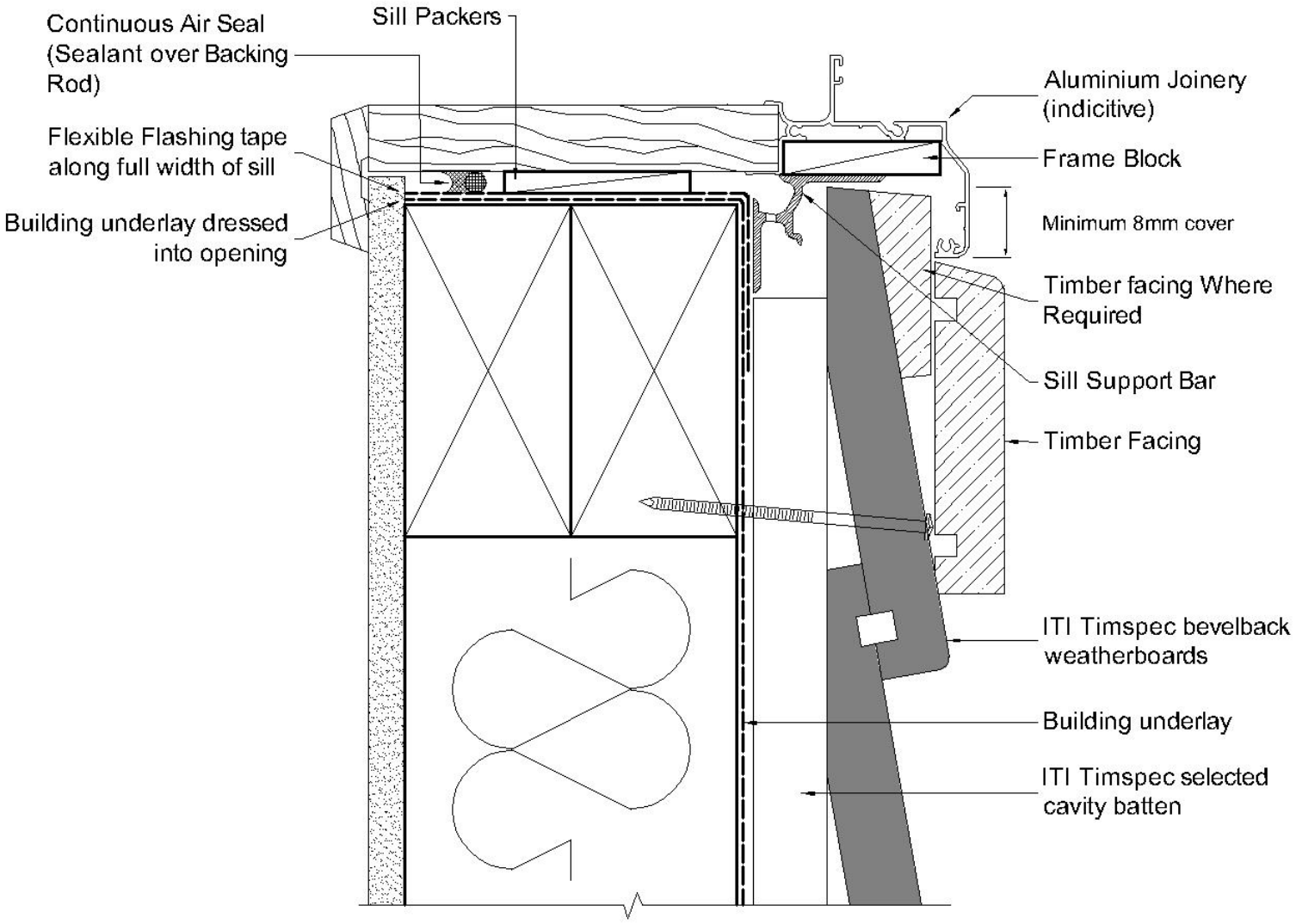


FIGURE 13. 6 BC 301 INTERNAL CORNER NOTCHED & SCRIBED

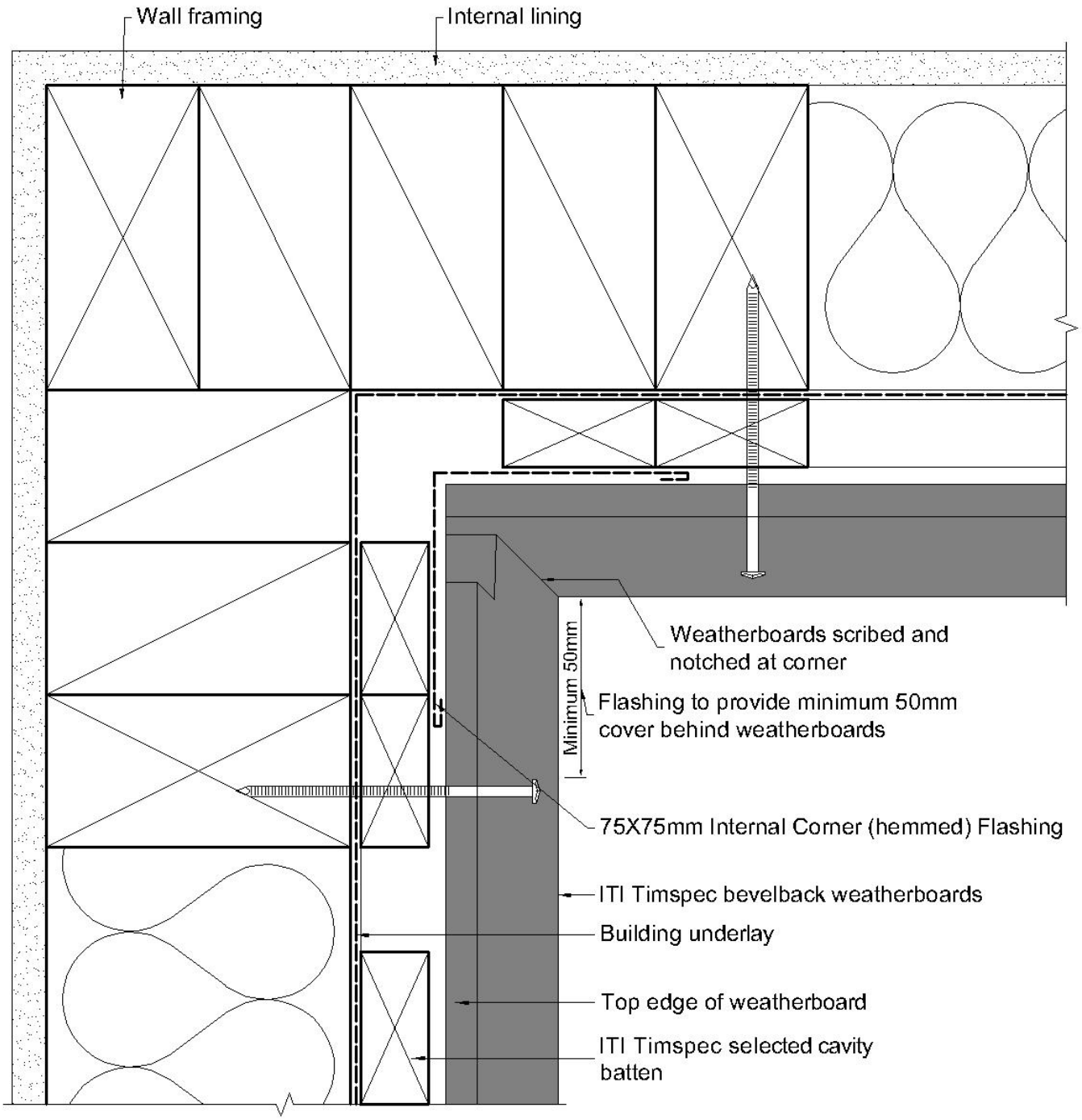


FIGURE 13. 7 BC 302 INTERNAL CORNER MOULDING

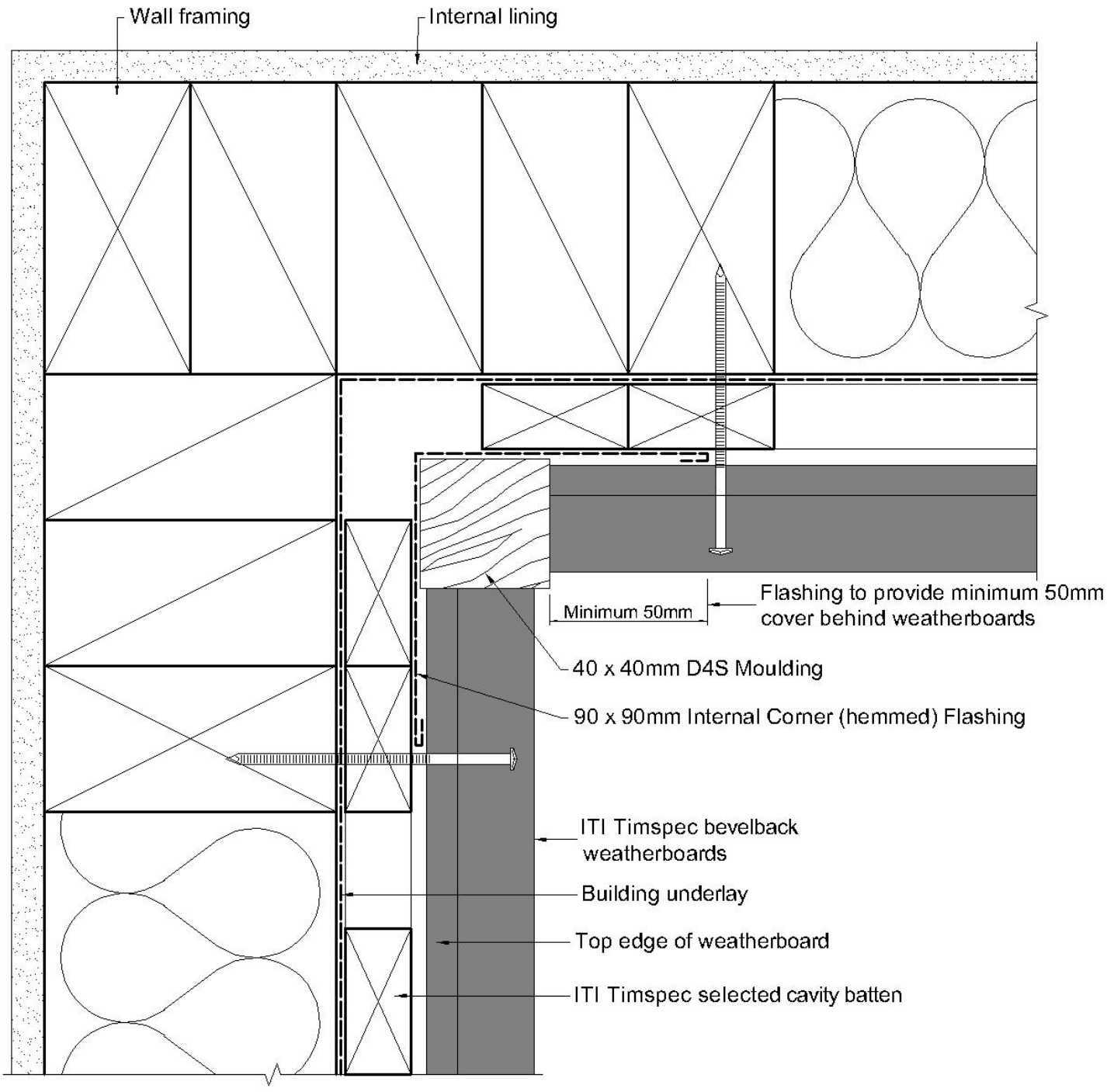


FIGURE 13. 8 BC 401 INTER-STOREY CAVITY JUNCTION

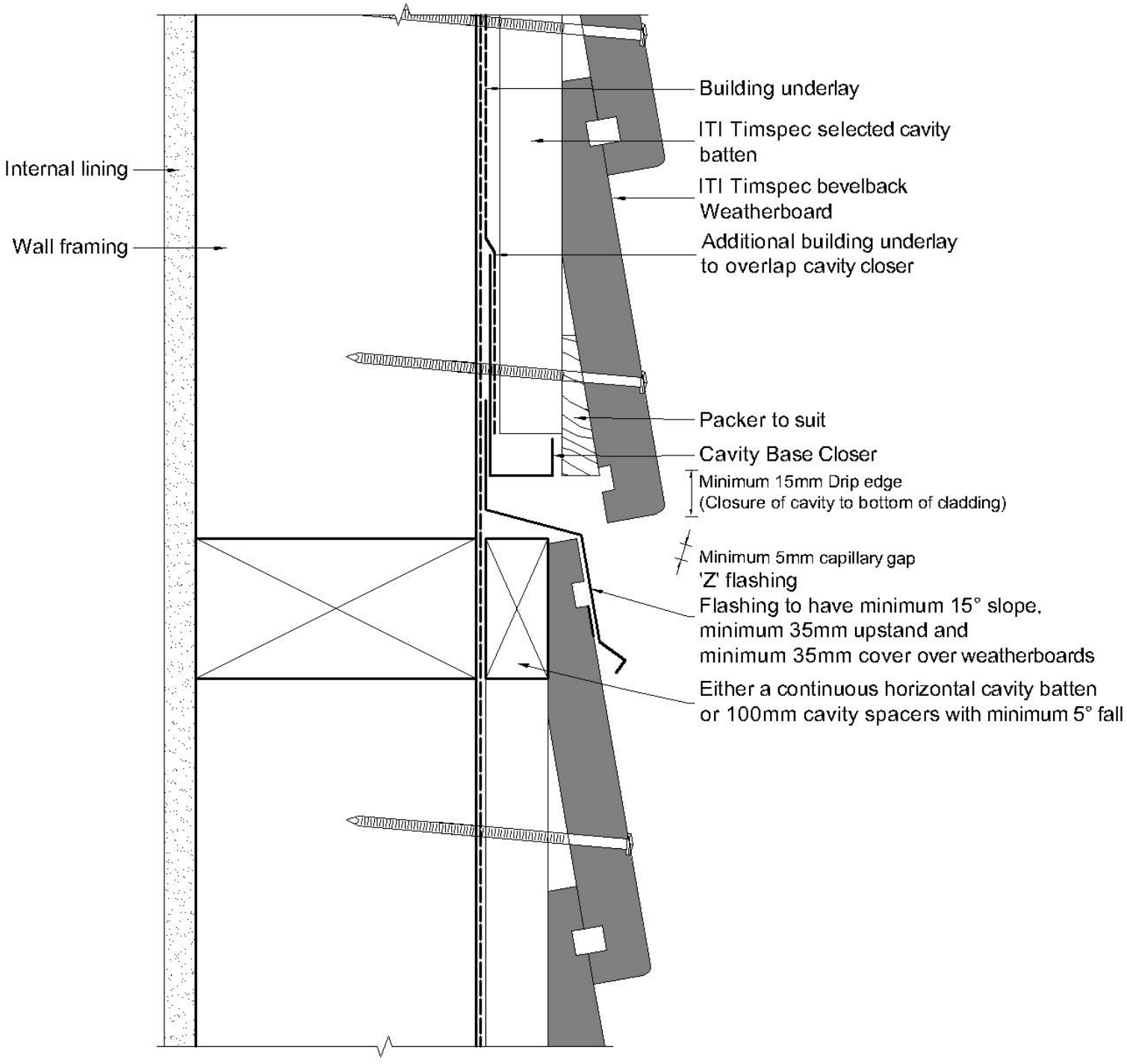


FIGURE 13. 9 BC 402 WITHIN BOARD JOINS (SCARF JOINT)

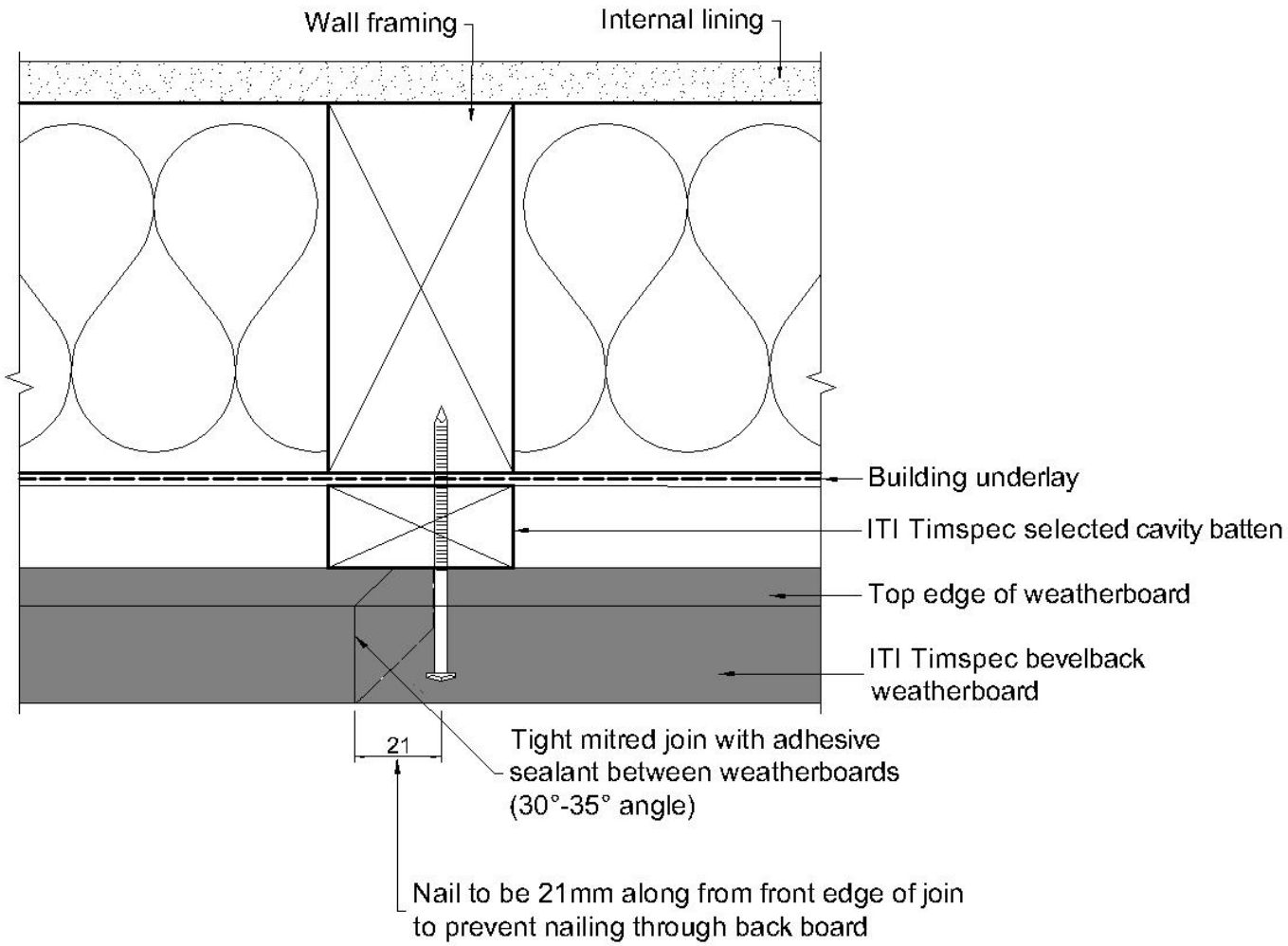


FIGURE 13. 10 BC 403 BOXED CORNER

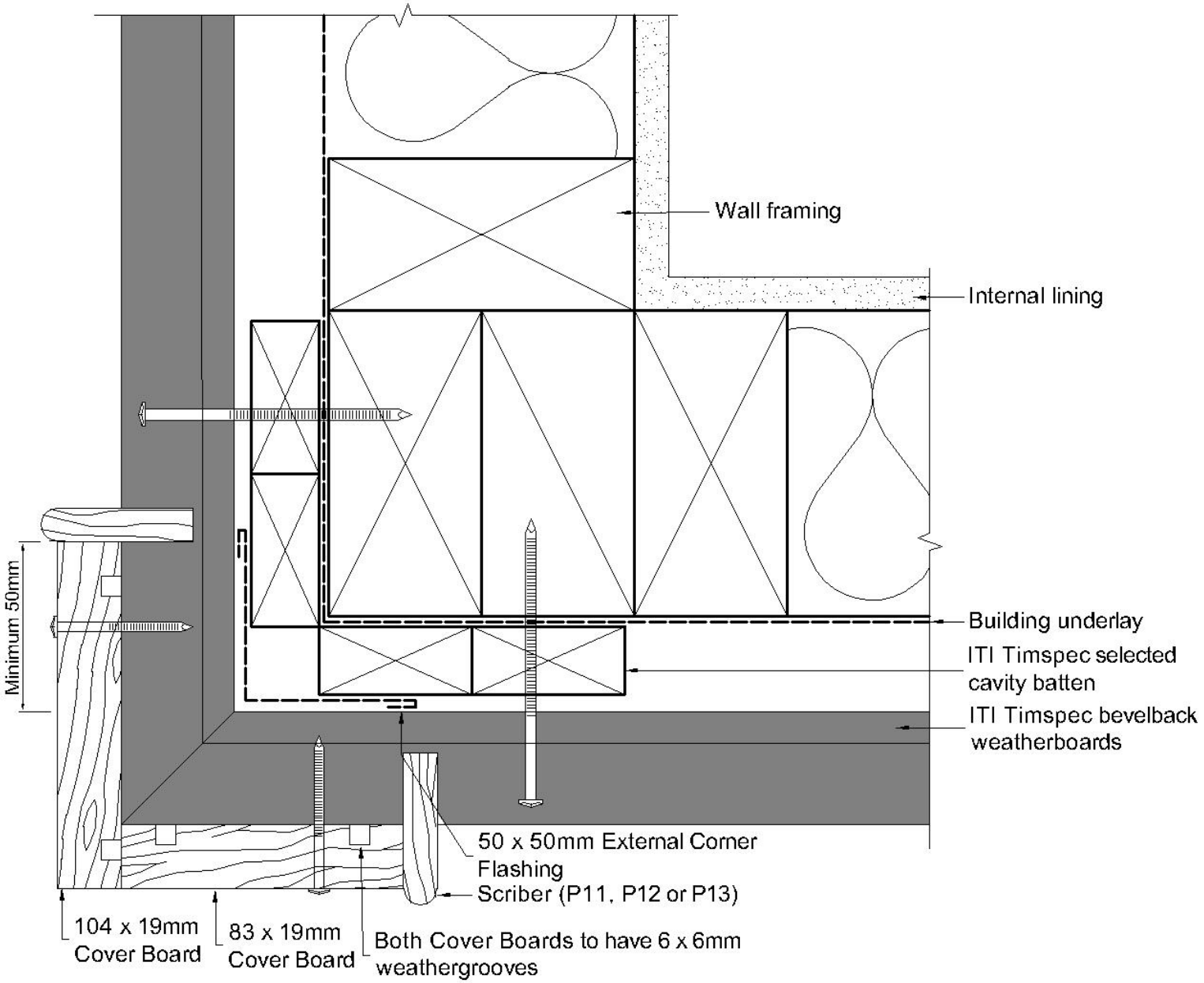


FIGURE 13. 11 BC 404 CORNER SOAKER

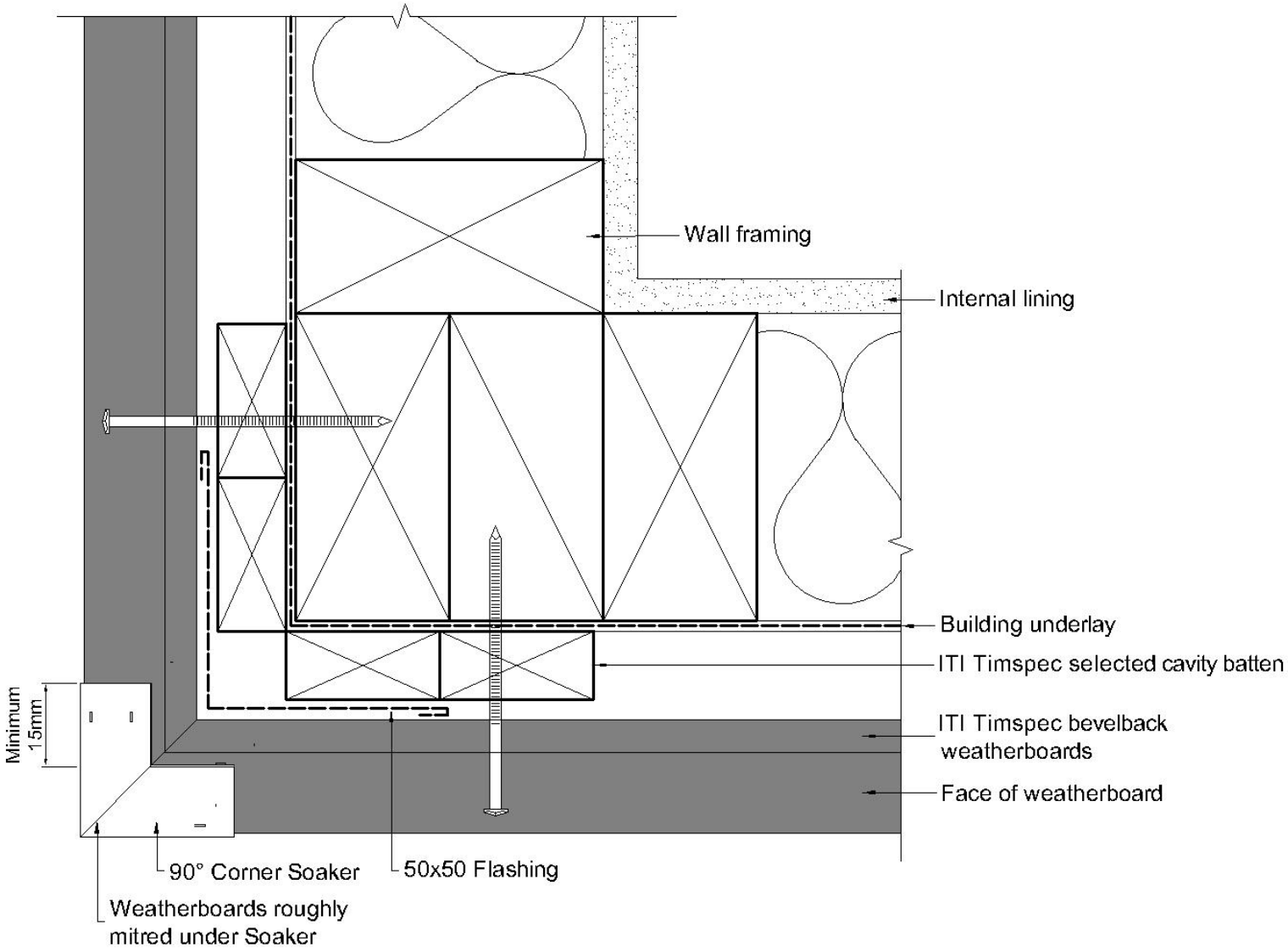


FIGURE 13. 12 BC 501 BASE, TIMBER FLOOR

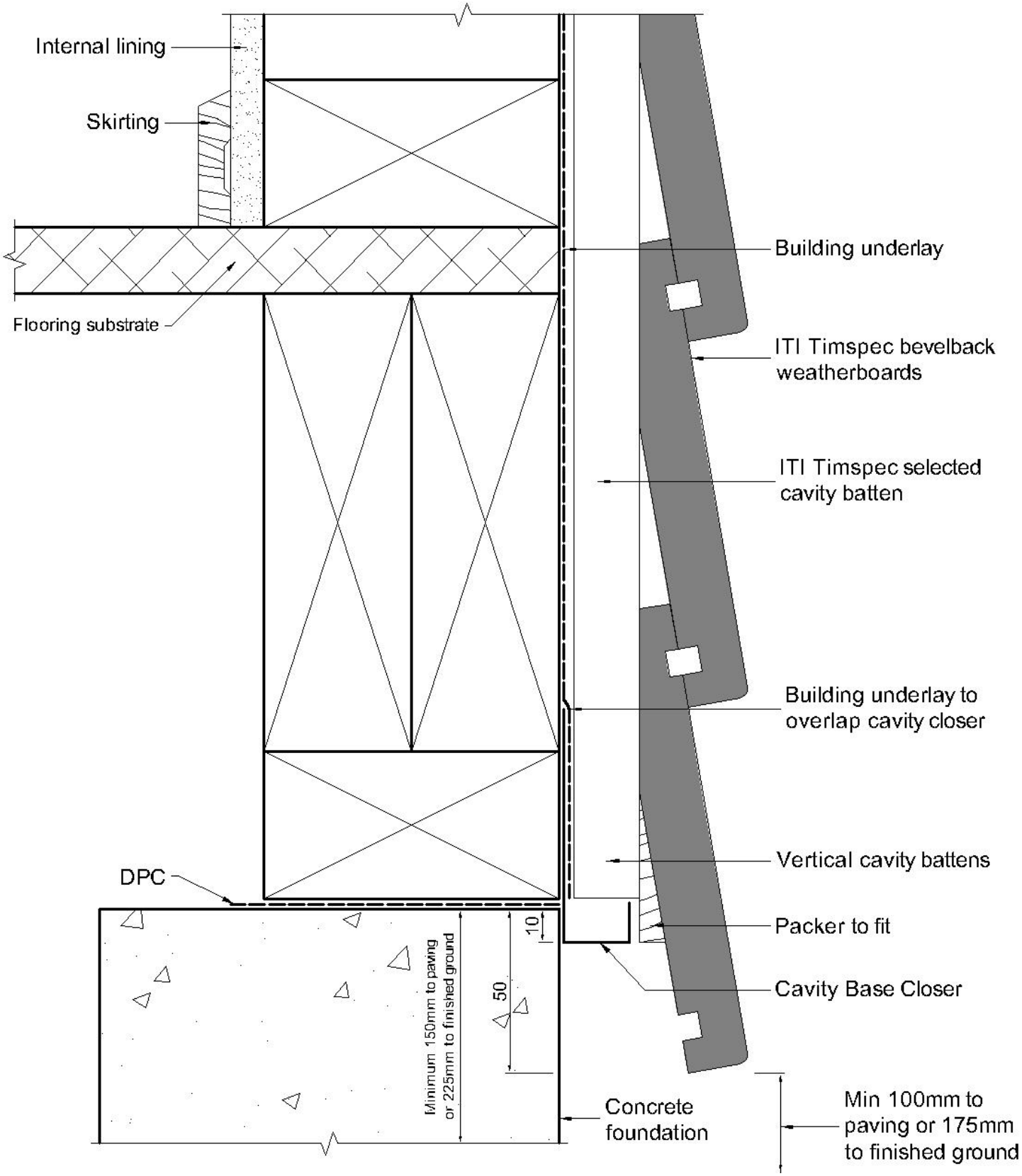


FIGURE 13. 13 BC 502 BASE, CONCRETE SLAB ON GROUND

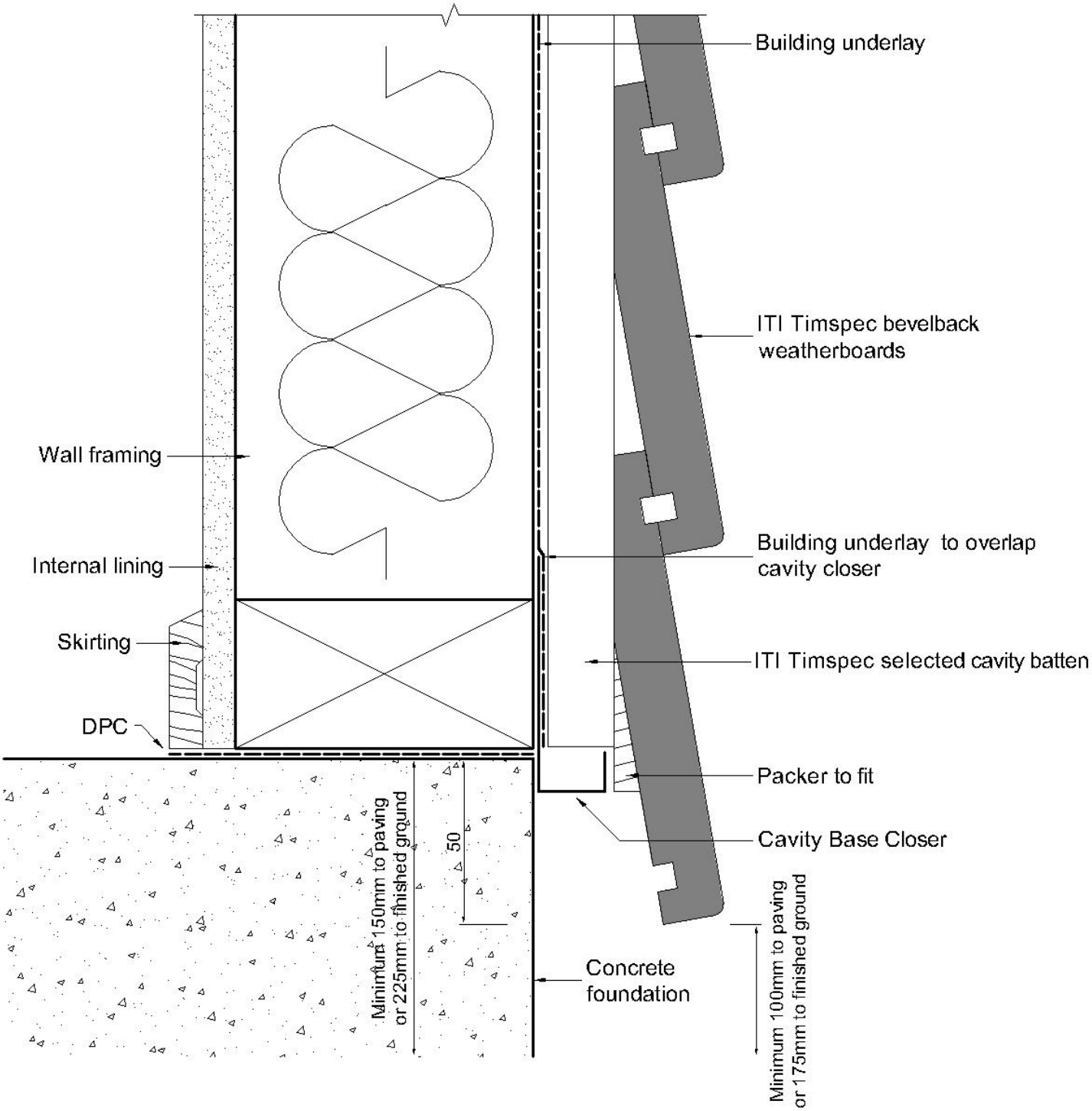


FIGURE 13. 14 BC 503 BASE, JUNCTION WITH BOTTOM OF CLADDING/ CLADDING FINISH ABOVE DECK

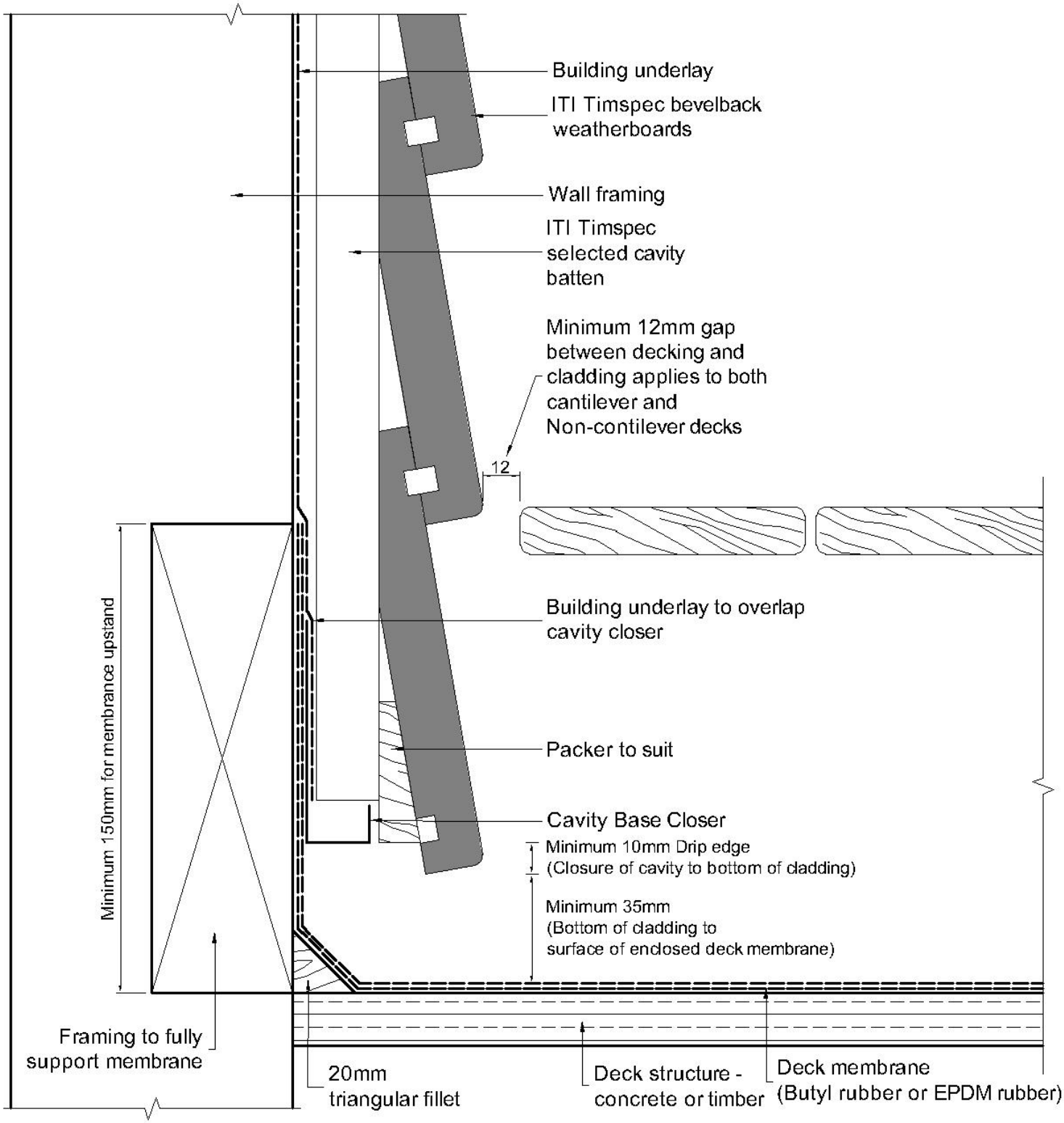


FIGURE 13. 15 BC 601 ROOF/ WALL TOP PLATE – FLAT SOFFIT

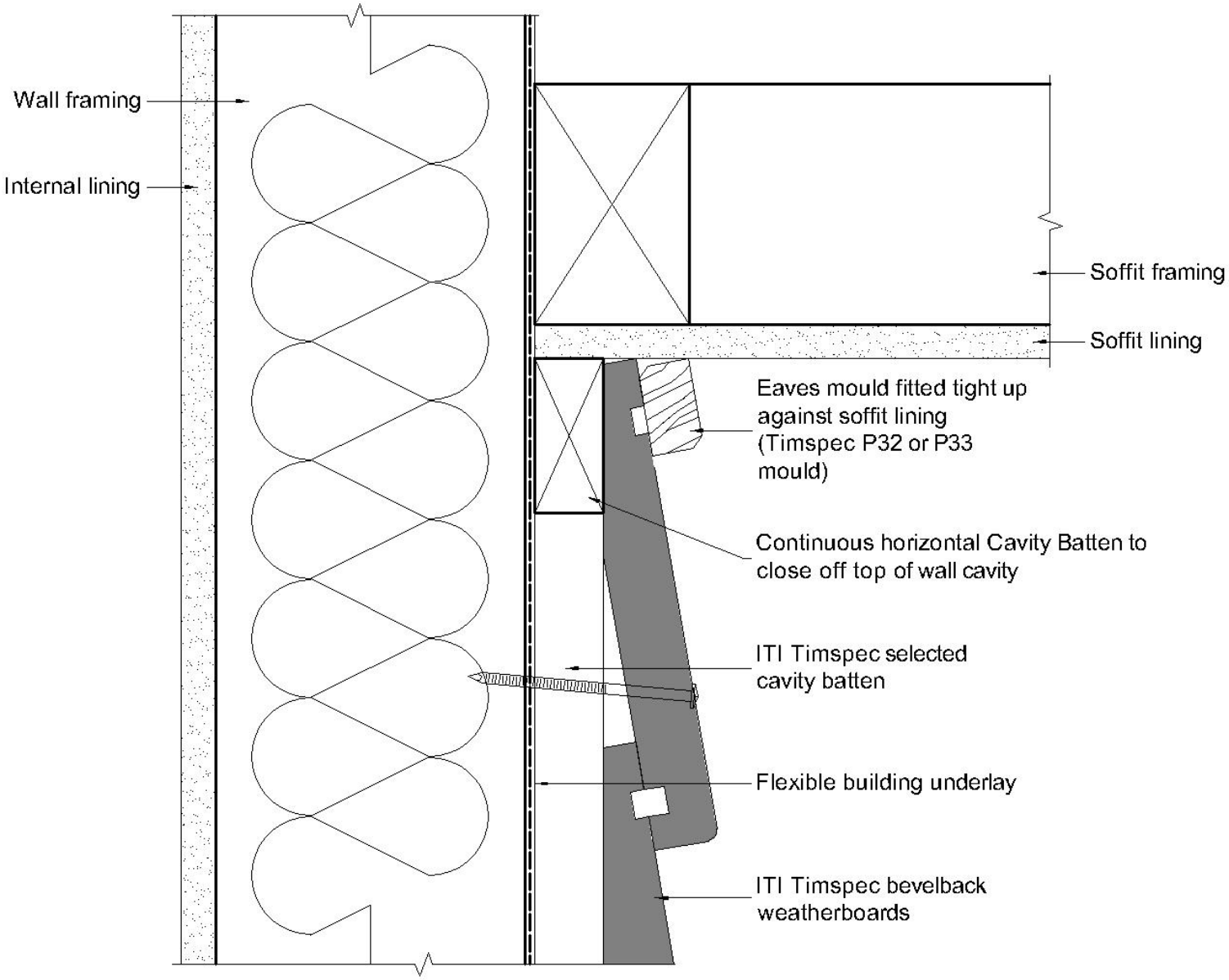


FIGURE 13. 16 BC 602 ROOF/ WALL TOP PLATE – NO SOFFIT

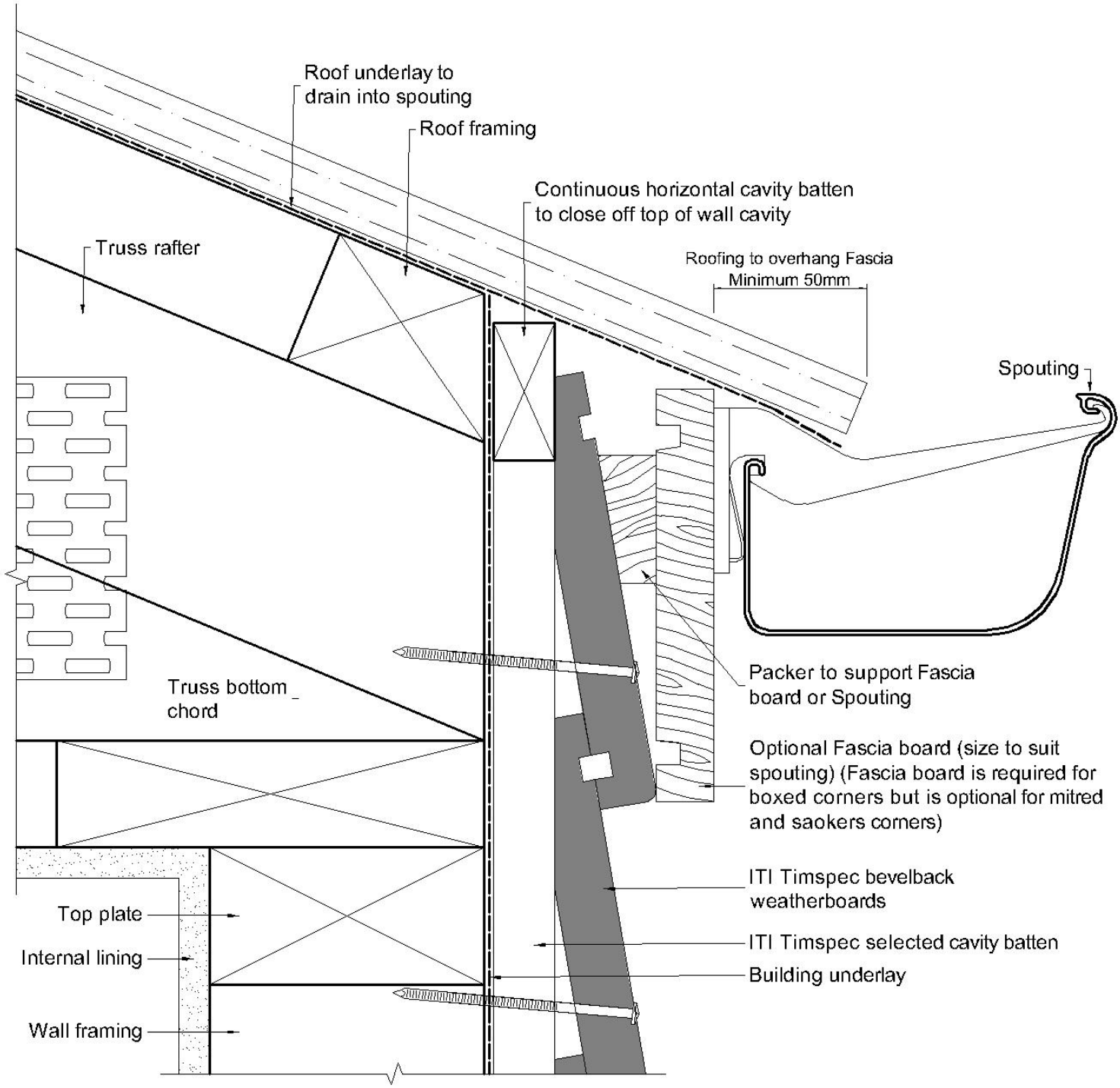


FIGURE 13. 17 BC 701 PARAPET/ CAPPING – EXPANSION JOINT

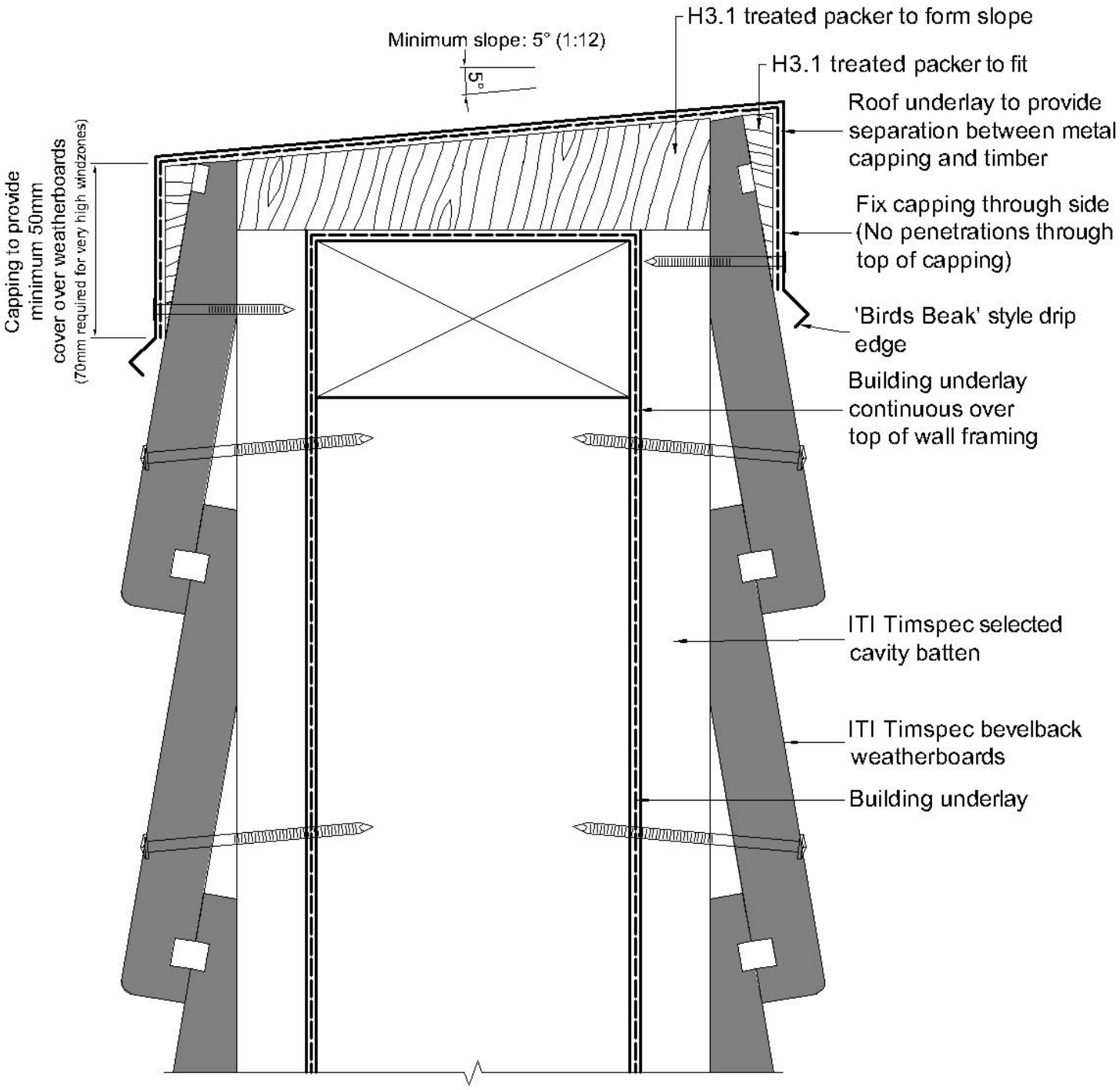


FIGURE 13. 18 BC 702 BALUSTRADE INTERSECTION WITH THE WALL

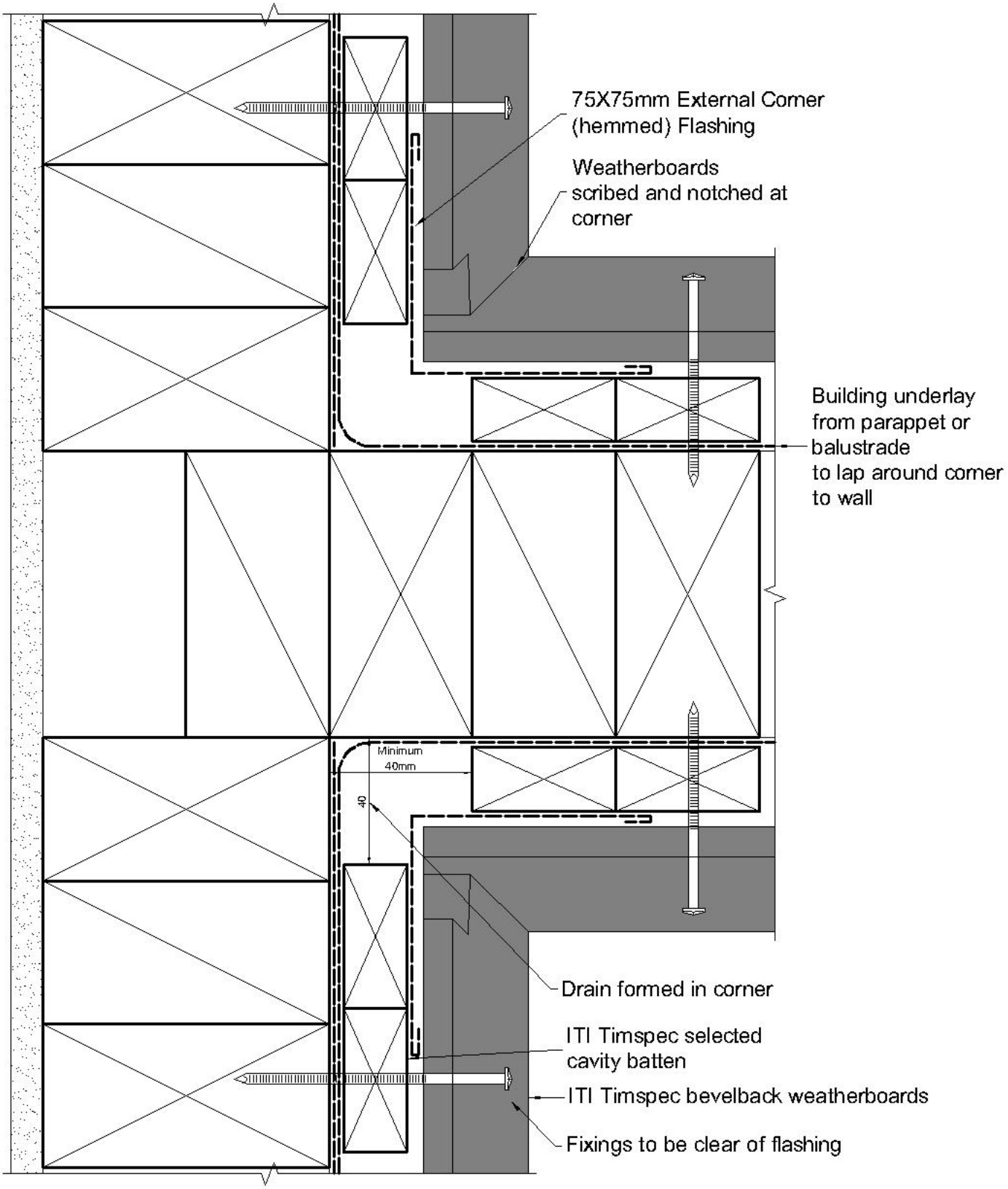


FIGURE 13. 19 BC 801 METER BOX HEAD

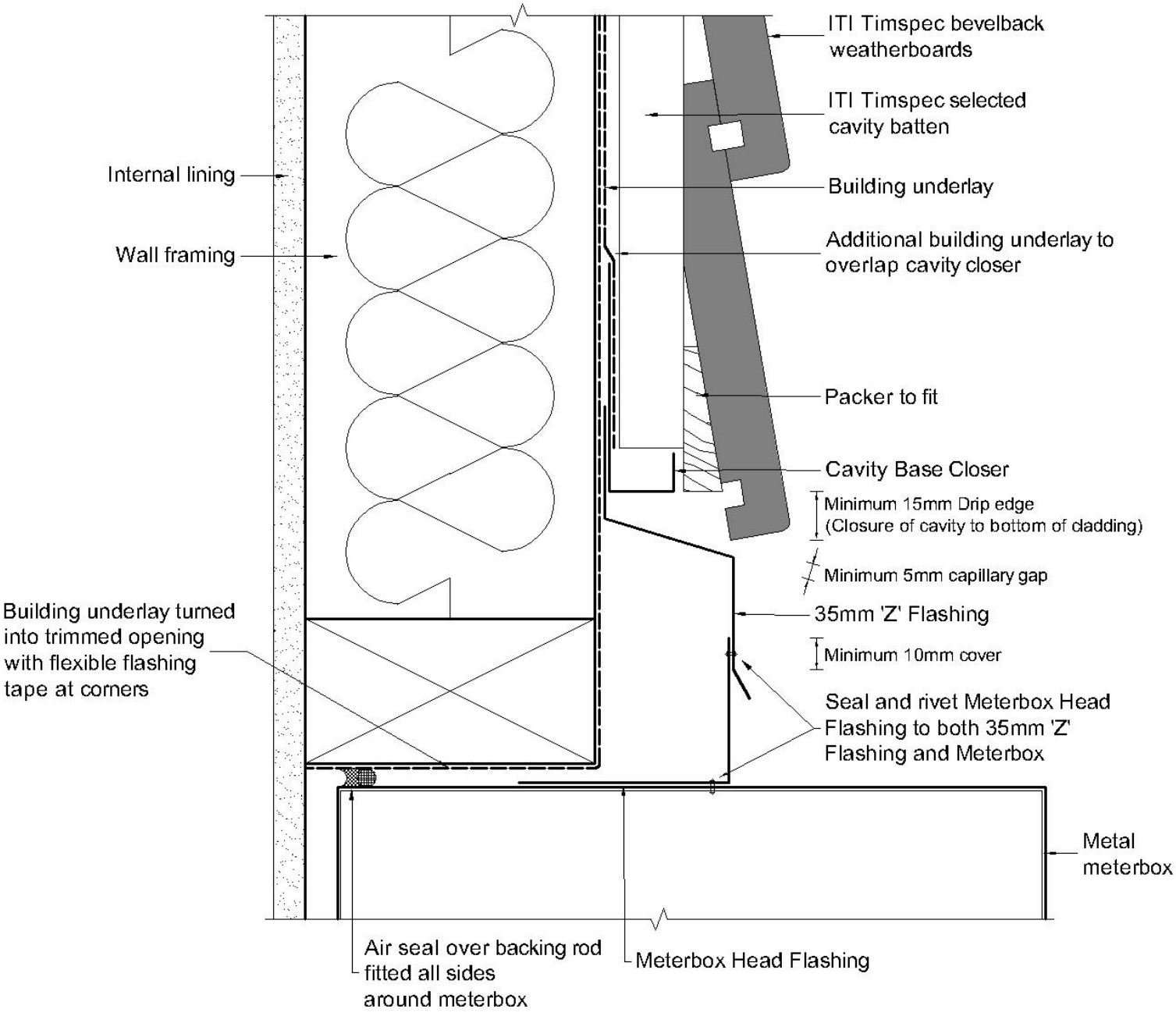


FIGURE 13. 20 BC 802 METER BOX JAMB

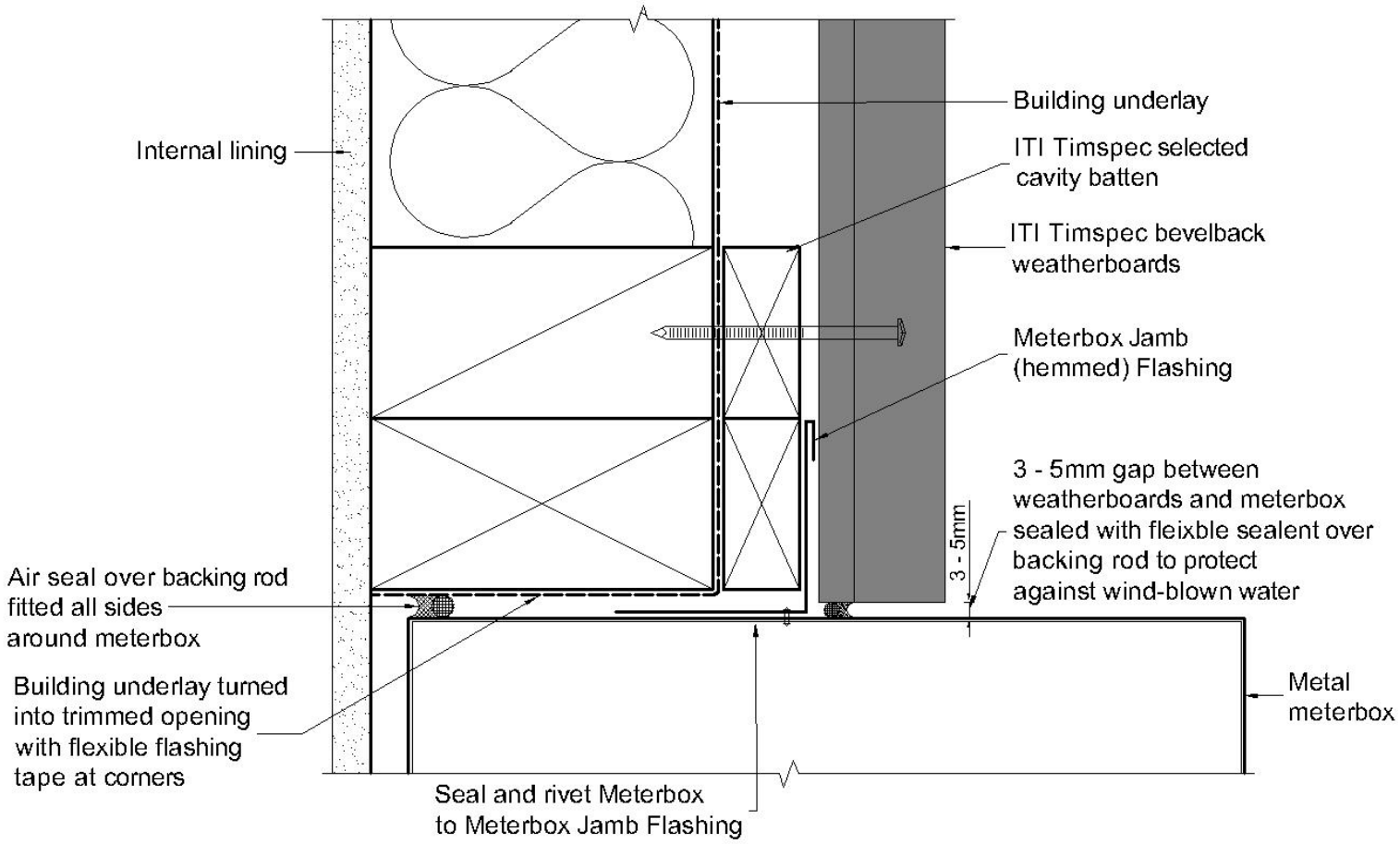


FIGURE 13. 21 BC 803 METER BOX SILL

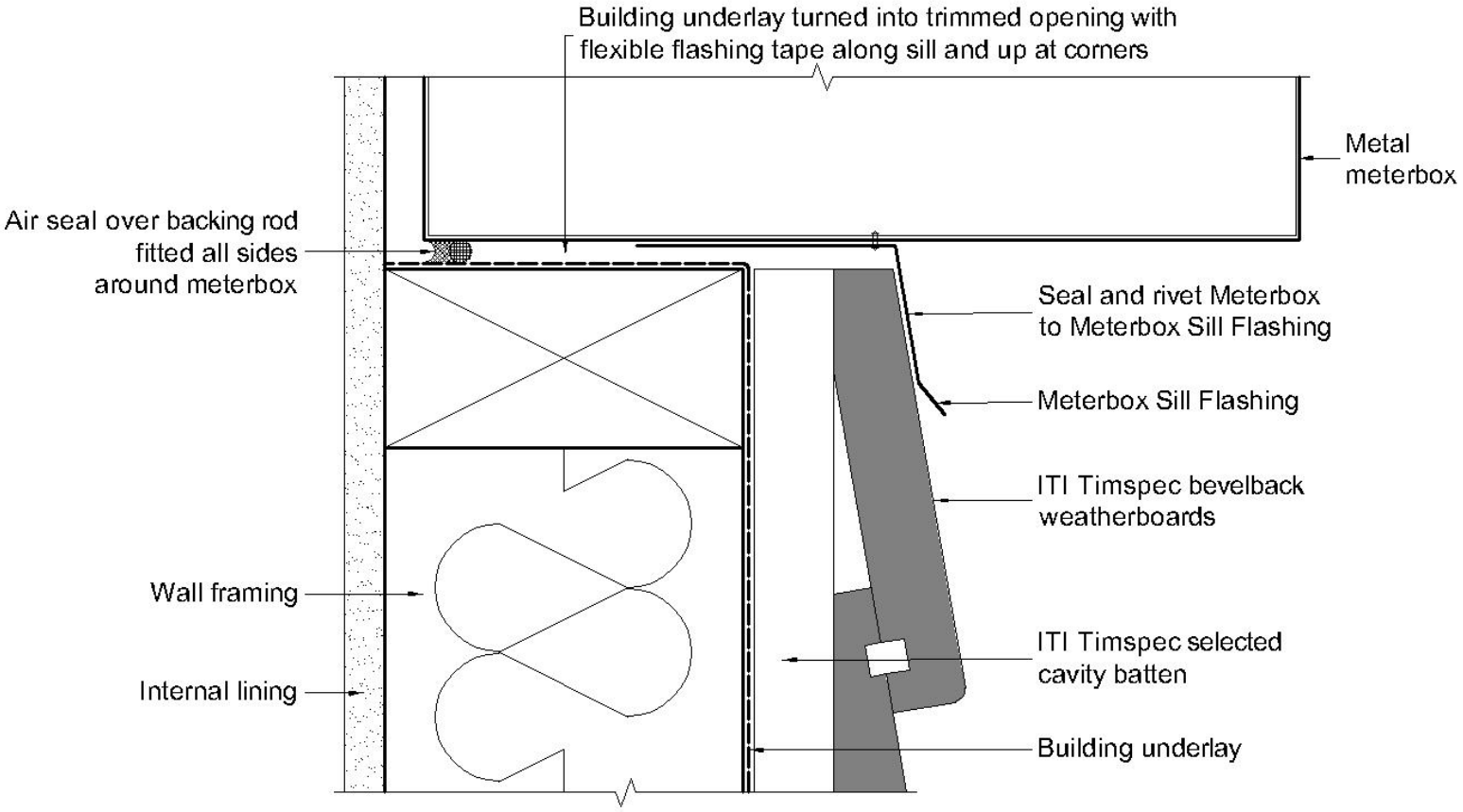
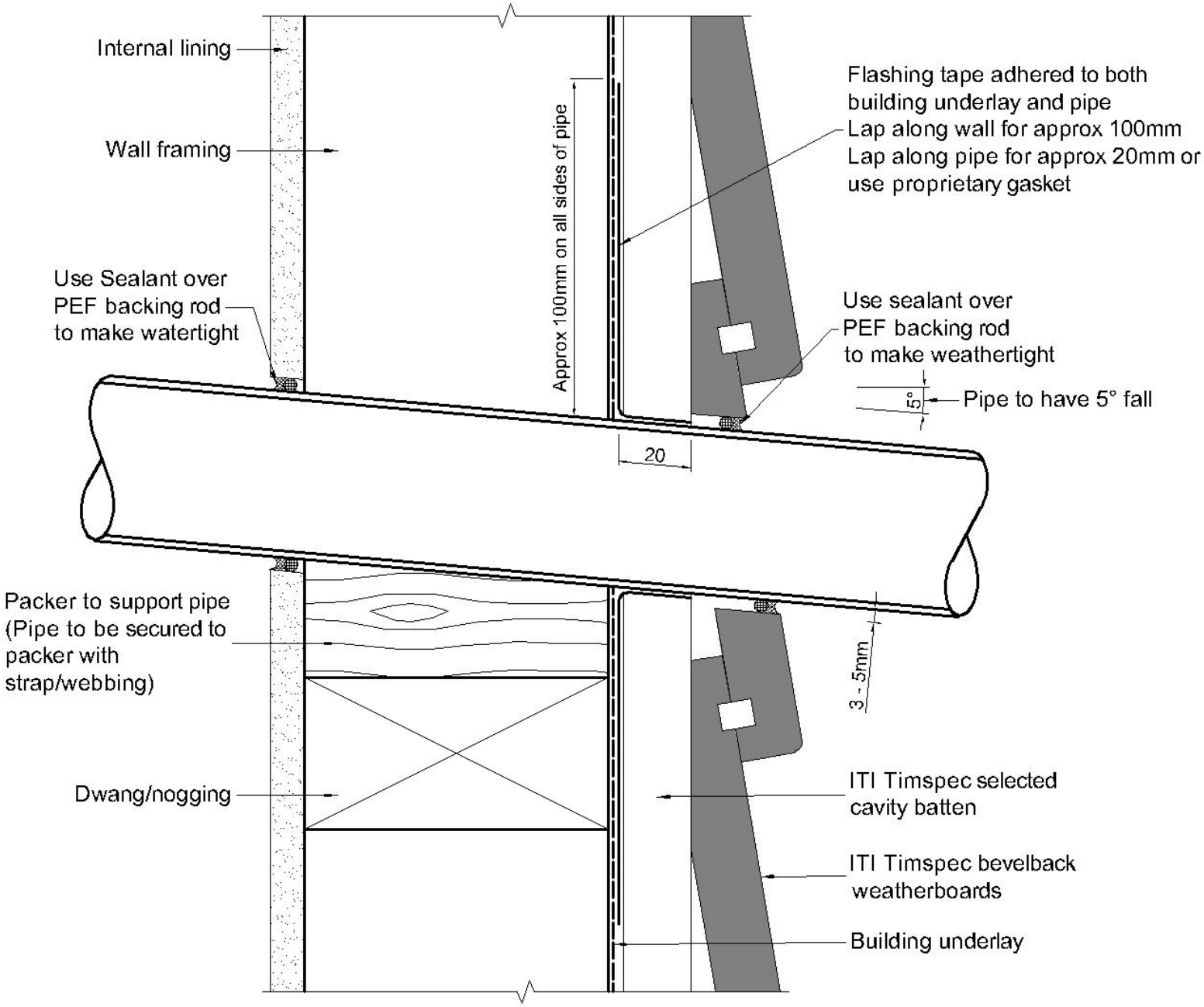


FIGURE 13. 22 BC 851 PIPE PENETRATION DETAIL



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