

Technical Supplement

Australia April 2020

James Hardie™ External Cladding over Masonry Walls

EXTERIORS - CUSTOM DESIGN

IMPORTANT NOTES

For specification, installation and warranty terms of Scyon™ Cavity Trim, ensure that you have the current technical information and guides. If in doubt, or you need more information, visit www.jameshardie.com.au or Ask James Hardie™ on 13 11 03.

INTRODUCTION

This technical supplement has been designed to assist in the installation of James Hardie™ external cladding over an existing structural masonry/block wall in a residential application. This supplement must be read in conjunction with the respective current James Hardie installation manual.

A range of James Hardie™ external cladding can be installed to James Hardie Intermediate top hats or vertical treated timber battens over brick work. These top hats are designed to be installed vertically and to replicate a stud frame layout. A vapour permeable membrane must be installed in front of the masonry wall and behind the top hats/battens.

In hot humid areas such as Cairns a non breathable membrane is a suitable alternative.

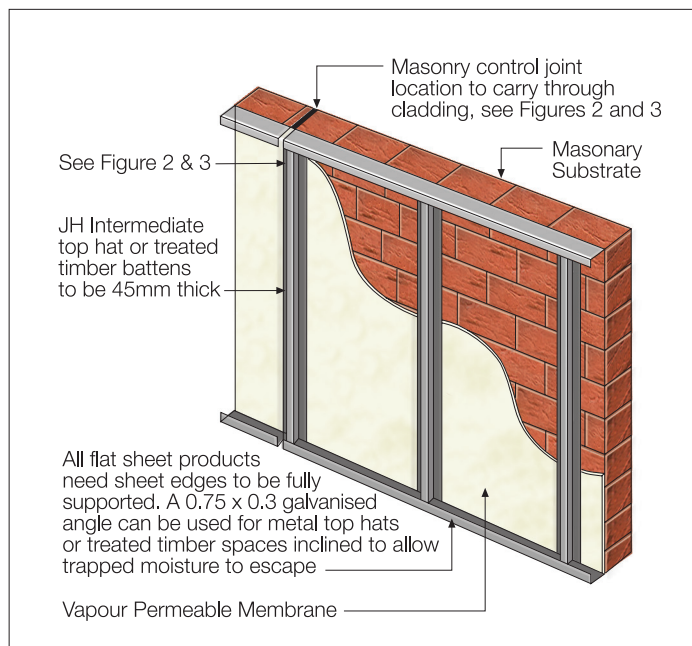


Figure 1 Installation Overview

STEP 1: INSPECT MASONRY WALL

A thorough inspection of the masonry substrate must be undertaken by a structural engineer to ensure the wall is suitable as a substrate for cladding.

Factors to consider and address include but are not limited to:

- Cracking or movement issues in the brick substrate or foundations.
- Moisture penetration and/or leaking through the block work and openings.
- There should be a 6mm control joints in the masonry wall as deemed by the building code of Australia.
- A structural engineer must determine whether the substrate is adequate to support the top hats and the James Hardie cladding.
- Windows and other openings may need to be removed and refitted to coincide with new wall configurations. (Refer to window manufacturer for suitable product)
- Is there adequate ground clearance for the external cladding? James Hardie external cladding must have a minimum 150mm clearance to the earth on the exterior of the building or in accordance with local building codes if greater than 150mm is required.
- Maintain a minimum 50mm clearance between James Hardie external cladding and roofs, decks, paths, steps, and driveways. Adjacent finished grade must slope away from the building in accordance with local building codes, typically a minimum slope of 50mm minimum over the first metre.
- Do not install external cladding such that it may remain in contact with standing water.

NOTE

Greater clearance may be required in order to comply with termite protection provisions. See below for more information.

STEP 2: MOISTURE MANAGEMENT

It is the responsibility of the designer or specifier to identify moisture related risks associated with any particular building design. Wall construction design must effectively manage moisture, accounting for both the interior and exterior environments of the building, particularly in buildings that have a higher risk of wind driven rain penetration or that are artificially heated or cooled.

In addition all wall openings, penetrations, junctions, connections, window sills, heads and jambs must incorporate appropriate flashing and waterproofing. Materials, components and their installation that are used to manage moisture in framed wall construction must, at a minimum, comply with the requirements of relevant standards and the BCA.

Vapour Permeable Membrane

Vapour permeable membrane must be installed under the top hats directly to the masonry wall in accordance with the AS/NZS 4200.2 'Pliable building membranes and underlays - Installation' and the manufacturer's specifications.

Vapour permeable membrane must have the following properties with AS/NZS 4200.1:

- Vapour barrier - low or medium
- Water barrier - high

The function of the vapour permeable membrane is to prevent moisture ingress by acting as a 'drainage plane' whilst enabling water vapour buildup from inside the frame to escape.

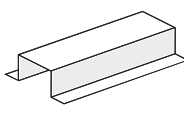
STEP 3: FRAMING

James Hardie Products must be installed to vertical battens and not directly to masonry walls.

These top hats must be installed vertically over the vapour permeable membrane back to the masonry substrate by a structural engineer.

The options include:

1. James Hardie Intermediate Top Hats.

	<p>Intermediate JH top hat Rolled steel sections 50mm wide x 35mm high x 1.15mm gauge thickness.</p> <p>Pack of 50 6000mm lengths ID CODE: 302701 7200mm lengths ID CODE: 302700</p>
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2. Treated seasoned timber battens.

Unseasoned timber must not be used because it is prone to shrinkage and can cause planks and frames to move. 'Timber used for house construction must have the level of durability appropriate for the relevant climate and expected service life and conditions including exposure to insect attacks or to moisture, which could cause decay. 'Reference AS 1684.2 'Residential timber framed construction'.

- a. A minimum timber batten 70x45mm installed on flat is required.

Where fixing requirements for external flat sheets require all edges to be supported eg bottom and top plate, a 35 x 30 x 0.75 angle, as shown in Figure 1, can be fixed over the battens/top hats.

The batten spacings are indicated in the relevant James Hardie product installation instructions and is based on the wind classification of the area and stud spacing.

As all bricks have different strength characteristics, a qualified structural engineer must design the connection between the substructure and the top hats/battens including the type of fastener and fastener spacing to the sub frame.

STEP 4: STRUCTURAL JOINTS

In many cases the masonry wall will need structural joints. These structural joints must come through the cladding. Refer to Figures 2 and 3 for vertical joints. If a horizontal joint is required in the cladding the battens must be discontinued and a corrosion resistant 'Z' flashing must be fixed behind the upper vapour permeable sarking and batten and out in front of the lower cladding.

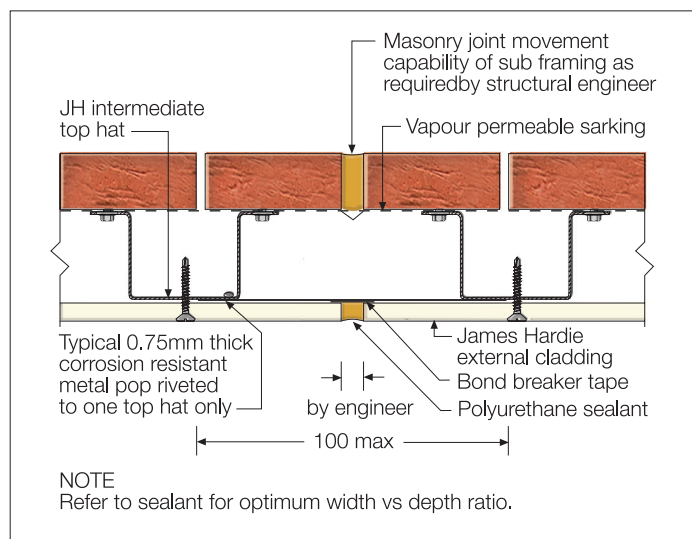


Figure 2 Vertical Structural Joint - Flat Sheets

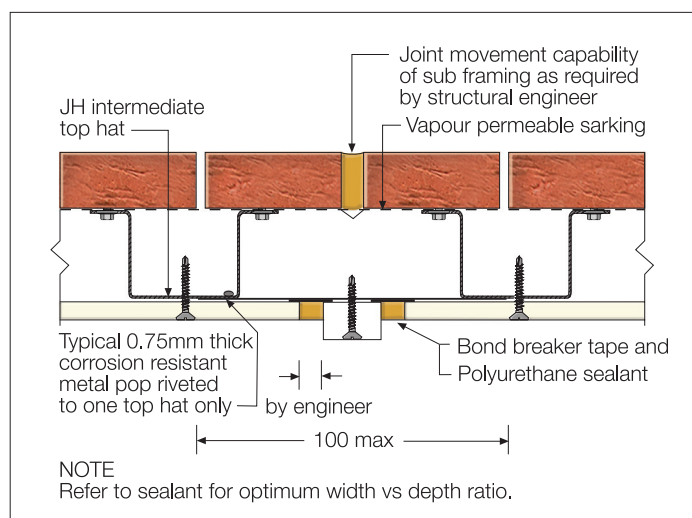


Figure 3 Vertical Structural Joint - Weatherboards

STEP 5: JAMES HARDIE EXTERNAL CLADDING

- All James Hardie products must be installed as per the current product installation instructions.
- Parapet walls must be capped with a continuous corrosion resistant flashing, see Figure 4 below.
- ExoTec can be installed over a Masonry substrate using ExoTec top hat and Intermediate JH top hats as per the standard installation recommendations.
- For the Scyon™ Matrix™ cladding, the Scyon™ cavity trim can be fixed to the masonry wall. Ensure an engineer details the connection between the Scyon™ cavity trim to the masonry wall, including the fastener type and fastener spacing's

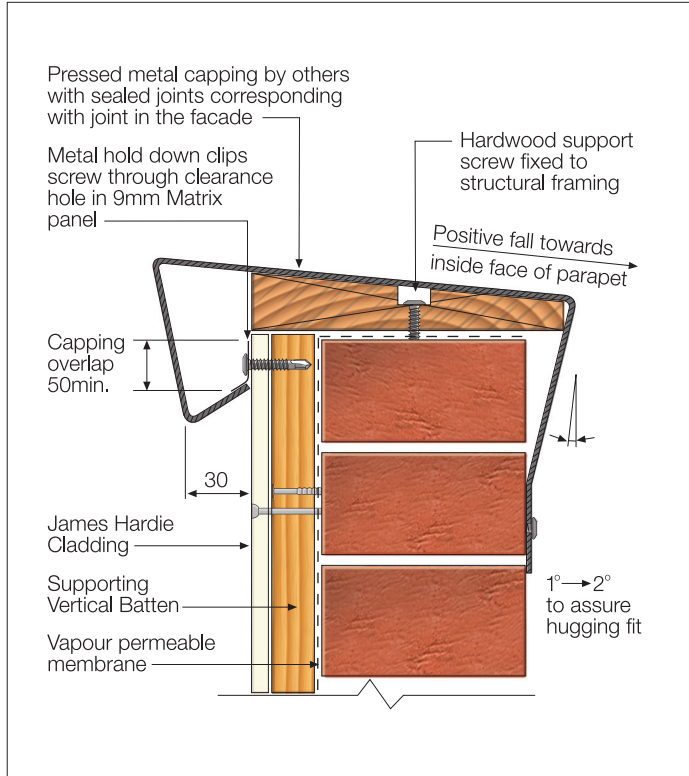


Figure 4 Parapet Capping Details

Due to movement that may occur in masonry the James Hardie HardieTex™ system and ComTex® facade panel and fixing system are not recommended. The designer is responsible for the performance of these products.

MAINTENANCE

The extent and nature of maintenance will depend on the geographical location and exposure of the building. As a guide, it is recommended that basic normal maintenance tasks shall include but not be limited to:

- Washing down exterior surfaces every 6-12 months*
- Periodic inspections should be made to ensure fasteners are adequately securing the sheets to framing.
- Re-applying of exterior protective finishes*
- Maintaining the exterior envelope and connections including joints, penetrations, flashings and sealants that may provide a means of moisture entry beyond the exterior cladding.
- Cleaning out gutters, blocked pipes and overflows as required.
- Pruning back vegetation that is close to or touching the building.

* Refer to your paint manufacturer for washing down and recoating requirements related to paint performance.