

## VIBLOCK STACK BONDED BRICK CLADDING SYSTEM – SPECIFICATION VB-S3

### THREE-STOREY STACK BONDED SPECIFICATION

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#### PRELIMINARY

This document is a bricklaying specification used for the construction of two storey, stack-bonded brick veneers. It is an 'Alternative Solution' to E2/AS1 applicable only when Viblock concrete bricks, as mentioned in this document, are used in a two-storey stack bond masonry brick veneer. This document is to be read in accordance with the pre-requisite specifications VB-S1 & VB-S2. Items not covered in this specification must comply with the general bricklaying specification for Viblock concrete bricks, Specification VB-S1.

Should a requirement in this document conflict with either VB-S1 or VB-S2, this specification, Specification VB – S3, is to apply.

#### DESIGNER

The 'Architectural Designer' is responsible for ensuring that the brick veneer, as detailed on the Building Consent Plans and Specification, complies with all aspects of this 'Specific Design'.

The designer must clearly mark on the plans submitted for Building Consent – '*Viblock Stack Bonded Brick Cladding System – Specification VB-S3' – no substitution.*

#### DESIGN LIMITATIONS

The Viblock three-storey stack bonded brick veneer shall be subject to the limitations outlined in Specifications VB-B1, VB-S1, and VB-S2 with the following exceptions:

- Brick must be laid in a stack bonded pattern.
- Up to a 3kPa floor loading.
- A maximum of two-storey construction.
- The scope limitations of NZBC Acceptable solution E2/AS1 Paragraph 1.1 in terms of floor area.
- A risk score of 0 – 20, calculated in accordance with NZBC Acceptable Solution E2/AS1 Table 2.
- Where timber studs are used as the support structure, a maximum stud spacing of 400mm shall apply.
- Installation of a mid-wall shelf angle at 6.0m, or at the structural floor level of the third storey floor (whichever is smaller), in accordance with Figure 2.
- Maximum veneer height of 10.0m for straight vertical panels and 12.0m to the apex of a gable or a pier as defined in this document, in accordance with Figure 1.

#### Bricks

This specification is only applicable to the following brick types manufactured by Viblock:

**Table 1 – Viblock – Bricks applicable to this specification**

Bricks applicable to this specification				
Viblock Brick Product	Size (LxHxW)	No/m <sup>2</sup>	Weight (kg) Per brick	Weight (kg/m <sup>2</sup> )
Dunstan	220 x 136 x 70mm	33	3.6	125
Shotover	220 x 73 x 70mm	60	1.9	120

Note: Table 1 includes a 4% allowance for wastage in the number of bricks per m<sup>2</sup>, for ordering purposes

**BRICK VENEER CONSTRUCTION**

**Maximum Veneer Heights**

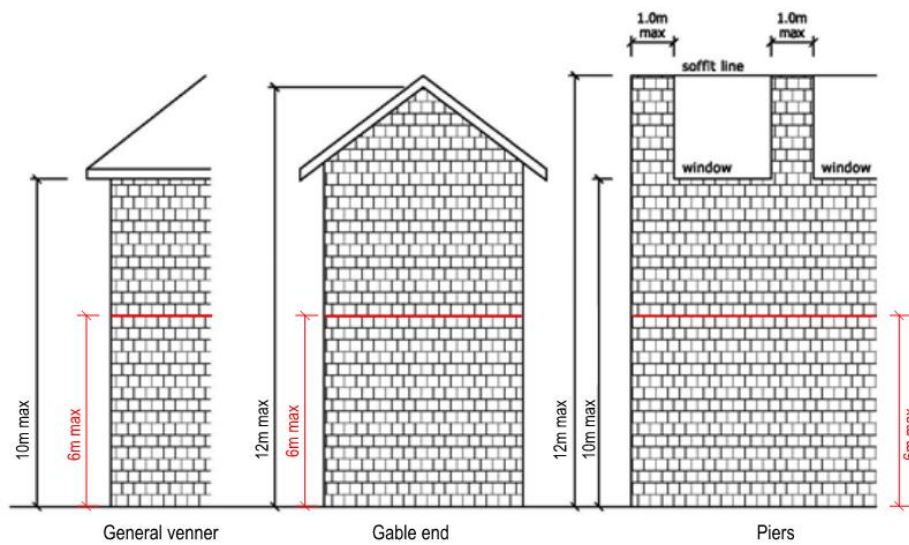


Figure 1 - Maximum Veneer Heights for three-storey stack bond construction

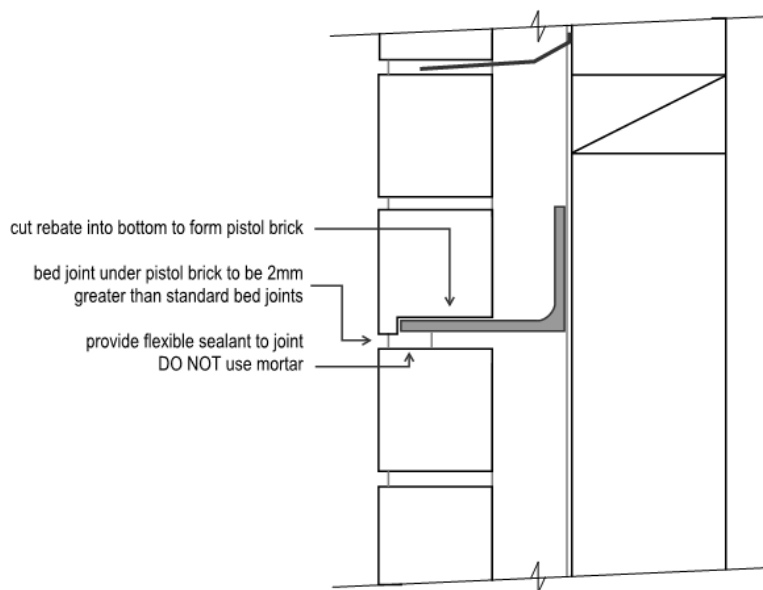


Figure 2 – Recommended hidden shelf angle detail

**Panels**

- The bricks may be laid in one panel to a maximum height of 10.0m.

- Above 6.0m, or at the structural floor level of the third storey floor (whichever is the lesser), a mid-wall shelf angle is to be installed in accordance with Figure 2.
- The shelf angle is to be installed at all areas where the veneer panel extends above 6.0m, except where this is a gable or pier in accordance with specification VB-S2.
- The bed joint under the shelf angle is to be fill with a suitable flexible sealant, NOT mortar.
- The veneer panels below 6.0m are to be installed in accordance with specification VB-S2.

#### *Gable Ends and Piers*

- The brick veneer can be laid to a maximum height of 12.0m with a gable end.
- A pier is defined as a brick panel not exceeding 1.0m in width and not supporting a brick steel lintel in any way. A pier must not exceed 12.0m in height.

### **Supporting structure**

#### *Timber Framing*

If the brick veneer is supported by timber framing, the framing must be constructed in accordance with NZS 3604 to a maximum stud spacing of 400mm crs.

#### *Concrete/Pre-cast Panels*

If the brick veneer is supported by concrete or pre-cast panels, these must be constructed in accordance with NZS 4229. Alternatively, a masonry or concrete support may be designed by a suitably qualified engineer.

### **Bracing**

Bracing requirements of walls may be calculated using the prescribed tables in NZS 3604 or by a suitably qualified engineer.

### **Brick Cavity**

The cavity shall comply with the requirements noted in Specification VB-S1.

### **Mid-floor**

Where practical, steel should be specified for mid-floor beams, as steel will have less overall creep, thus reducing the differential movement within the structure. This will in turn lower the chance for damage to the veneer.

### **Brick Ties**

Brick ties shall comply with the requirements noted in Specification VB-S1 with the exception of the spacing requirements outlined below:

#### *Brick tie spacing*

Brick ties are to be fixed horizontally to studs at a maximum spacing of 400mm, and vertically depending on the height of the brick as per Table 2 below.

**Table 2 – Brick ties spacing**

<b>Placement of Brick ties in Mortar Courses</b>		
<b>Viblock Brick Product</b>	<b>Height of Brick</b>	<b>Studs at 400mm crs.</b>
Dunstan	136mm	Every 2 <sup>nd</sup> course
Shotover	73mm	Every 3 <sup>rd</sup> course

### Joint Reinforcement

- Bed joint reinforcement across the brick veneer is to comply with the requirements set out in specification VB-S2.

### Lintels

Lintels shall comply with the requirements noted in Specification VB-S1, with the following exceptions:

- Seated lintels may only be used over openings in the second and third level of a three-storey building.
- Seated lintels may not be used over a skirt roof (use of seated lintels over an opening above a skirt roof is permitted).

### Shelf Angles

In addition to the requirements set out in Specification VB-S1, shelf angles may be installed above skirt roofs.

- The architect/engineer is to ensure an adequate support structure for fixing of the shelf angle.
- The maximum veneer panel height above a shelf angle over a skirt roof is to be 4m, measured as shown in Figure 3 below.

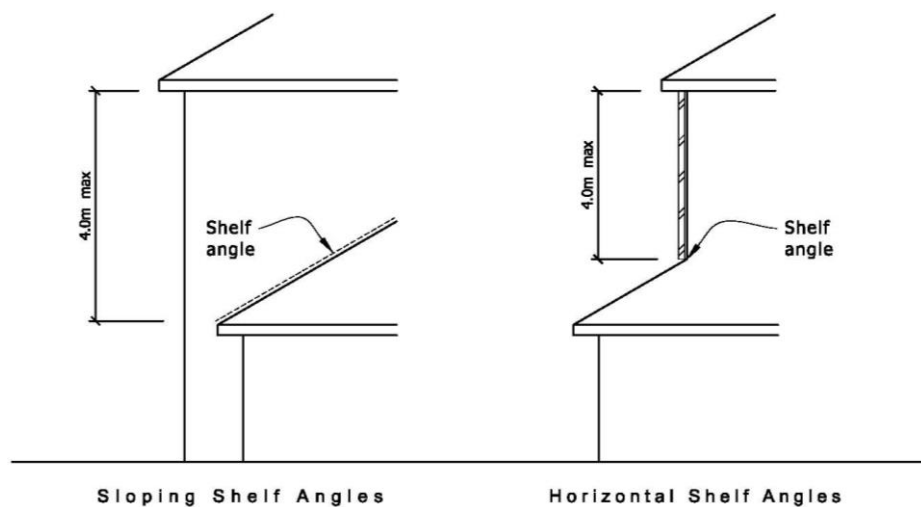


Figure 3 – Shelf Angles

### TECHNICAL SUPPORT

Should you require any technical support on the Viblock Brick Veneer System, please contact Viblock on:

**T:** (03) 343 0394

**Email:** [sales@viblock.co.nz](mailto:sales@viblock.co.nz)

**Website:** <https://www.viblock.co.nz/contact-us/>