FUNDAMENTAL
Brick Veneer

INFORMATION & DETAILING – PLUS E2/AS1 (DEC.2011)
1.0 Design Fundamentals

1.1 The Brick Cavity

It is rare to have any issues in regards to weathertightness in a brick veneer simply because it has always been constructed using a cavity between the bricks, and the timber framing or structural block-work that supports it. Correctly constructed, it is a very robust system.

The cavity performs 4 important functions. It separates the flexible timber structure from the rigid brick structure, allowing movement. It provides a method of securing the brick cladding to the structure. It provides a means of allowing air movement to dry the brick veneer, but without question, it’s most important function being to prevent moisture seeping through the bricks and mortar joints, transferring to the timber framing.

The minimum width cavity is 40mm and the maximum 75mm – this measurement is taken from where the brick tie is secured to the framing, which is not necessarily the line of the supporting structure. It for any reason the cavity is less than the 40mm minimum, such as a particular brick detail, it is essential that the timber framing is protected using a water-proof membrane such as polyethylene.

Specifying and installing ‘wash-outs’ at the base of the brick veneer is standard ‘Good trade practice’. This involves laying every 10th brick plus a corner brick on a bed of sand, once the veneer is approximately 800mm high, remove these bricks to facilitate the regular washing out of mortar at the base of the cavity. A clean cavity, one free of mortar bridging the gap, is essential to preventing moisture transference.

The cavity width should be clearly marked on all working drawings. Recommendation: Design to a 50mm cavity. It provides a means of allowing air movement to dry the cavity and the veneer, plus weep holes to drain the veneer, is considerably more important. However, no acknowledgement of this fact is made and allowed for in E2/AS1 so the veneer, unless ‘specifically designed’ must comply with the weep and vent hole requirements for a face veneer. An ‘Alternative Solution’ could be weep 50 x 10mm weep holes at 1.0m crs or 500 sqmm/m length of wall. The elimination of vent holes in water-proof veneers could be included in the submitted ‘Alternative Solution’.

1.2 Vent and Weep Holes

It is important to remember that brick veneer is not waterproof; however, clay brick veneers are an excellent rain shield. A saturated brick veneer weighs approximately 8% more than a dry veneer, reflecting the density of the product. In a clay veneer, a considerable amount of water is required before moisture is likely to flow down the back of the veneer.

The requirement for weep holes along the bottom of a clay brick veneer is one 75 x 10mm weep hole every 800mm along the base or alternatively 1000 sqmm/sqm of wall. Any weep hole wider than 13mm requires vermin proofing.

1.3 Brick Ties

The weep hole requirement also applies across the heads of doors, windows and openings.

Brick veneer also requires ventilation at the top of the veneer to ensure good air circulation, allowing air to move through the weep holes at the base, up the cavity and out through the top of the veneer. The requirement is the same as for the base. However, if a 5mm gap is left around the top of the veneer, no vertical vent holes in the perpend joints are required. Note, always install the vent holes in the second brick from the top so as not to weaken the bond of the bricks on the top row.

Vent holes are generally not required under window sills as air can move freely around the frame. However, for window-sills over 2.4m in length, install vent holes evenly spaced at 800mm crs, under the sill. E2/AS1 requires the sill in this situation to be overhanging.

Where a brick veneer is to be plastered and painted, the brick veneer exterior cladding is effectively a waterproof system and therefore the need to have air circulation to dry the cavity and the veneer, plus weep holes to drain the veneer, is considerably less important. However, no acknowledgement of this fact is made and allowed for in E2/AS1 so the veneer, unless ‘specifically designed’ must comply with the weep and vent hole requirements for a face veneer. An ‘Alternative Solution’ could be weep 50 x 10mm weep holes at 1.0m crs or 500 sqmm/m length of wall. The elimination of vent holes in water-proof veneers could be included in the submitted ‘Alternative Solution’.

1.4 Mortar Joints

N.Z Brick and Stone Ltd (t/a Midland Brick N.Z) has provided this information as a guide only. We accept no liability for the contents of this Guide. It is important to ensure all specification and detailing comply with the current New Zealand Building code and relevant New Zealand Standard. Where necessary contact your Architect / Designer and BCA prior for formalising details.

Catalogue: Tech Vol1:13
minimum length of tie. The tie must be at least half way across the width of the brick, but also have a minimum cover of 15mm over the end of the tie.

The tie must be installed with a 5\(^\circ\) slope down from the frame, and may be laid directly onto the clay brick in most cases.

Brick ties are to be within 300mm of panel side or edge; within 300mm or two courses, whichever is smaller, at the top of the veneer.

The bottom brick tie must be within 300mm of the base of the veneer or two courses, whichever is the smaller. The ties are to be fixed to studs only, at a maximum of 600mm crs horizontally, and 400mm maximum vertically. Ties should also be positioned within 200mm of openings.

Refer to Table 18A E2/AS1 for full information on tie installation.

1.4 Mortar Joints

Mortar joints make up between 16% and 20% of the face of the veneer, so they have a considerable impact on the look of the finished wall, and therefore should be given the attention they deserve.

The shape and finish of the joint, the colour of the mortar and the consistency of the joints, all play an important part in the finished appearance of the veneer.

Mortar joints should be 10mm +/- 2mm; the minimum joint thickness is 7mm and the maximum 13mm. The bottom mortar joint may be up to 20mm in thickness to accommodate variations in the slab. These requirements apply regardless of the veneer being plastered.

The mortar joint may be raked to a depth of 6mm max. from the face of the brick; not to the arts on the edge. It is recommended that the rake be set at 4mm then tuneded in order that the 6mm is not exceeded. It should be remembered that modern bricks may only have an external wall thickness of 15mm.

All mortar joints must be fully bedded; percent joints require special attention to ensure this happens.

1.5 Slab Recess

The cavity system employed in brick veneer construction is extremely robust, and an important part of this system is the recess in the floor slab in order that the brick veneer sits below the level of the finished floor. This allows any moisture reaching the inside face of the bricks to run down the wall and escape out a weep hole without posing any threat to the inside of the dwelling, and in particular the timber framing.

The building codes require a minimum 50mm step down, however, it is strongly recommended that you design and build to a 90 – 100mm step down for added security. In addition, external sealed ground can then be taken virtually to the base of the brick veneer hiding any foundation.

It is ‘Good trade practice’ to put a sloping fillet at the base of the cavity to direct water to the outside, but this is not essential.

It is important to prevent any moisture sitting in the bottom of the cavity from penetrating through the edge of the slab, under the damp proof course of the bottom plate, and entering the dwelling.

The sealing of the slab edge and the bottom of the cavity does not need to go under the brick, it can be done in several different ways. The polythene under the slab can be extended into the cavity and taken up and stapled to the framing, with the building wrap brought down on top of it. Two coats of bitumen emulsion paint can be applied to the slab edge and the base of the cavity. The slab edge and the base of cavity could be sealed using a flexible flashing tape such as ‘Alubond’.

The width of the recess at the base of the veneer upon which the bricks sit, is governed by 3 factors; the desired cavity width, the width of the brick to be used, and the amount, if any, that the brick overhangs the foundation. Often at the design stage the brick product to be used is yet to be decided so it is important to design a ledge width that provides the builder and homeowner with the most flexibility.

Recommendation: Design using a 120mm wide ledge and planning to overhang the brick 10mm to provide a drip edge is ‘Good trade practice’.

1.6 Control Joints

Generally there is no need for control joints in clay brick veneers, which are very stable. A fractional expansion can occur soon after manufacture, but this does not present any issues in normal residential construction.

Other materials, such as concrete or natural stone, which can also be used in veneer construction can shrink in size to an extent that control joints are normally required.

In concrete brick veneers, E2/AS1 calls for vertical control joints to be located:
(a) Within 600 mm of T joints
(b) Within 600 mm of L-shaped corners or by restricting the spacing to the next control joint to 3.2m maximum.
(c) At changes in wall height, exceeding 600 mm.
(d) At changes in wall thickness.

It is not uncommon to read reports from Geo-Technic Engineers requiring control joints in clay brick veneers due expansive clay soils, but this is not necessary. Where such soil types occur an appropriate foundation should be designed to manage this, and there is no meaningful evidence that bricks crack under these conditions making control joints necessary.

However, control joints should be considered in clay brick veneer in the following circumstances. If a wall is 10.0m or longer and has no window or door openings, then a control joint should be installed at an intermediate point. Where a small panel of brickwork adjoins a large panel of brickwork, movement within the framing may cause a crack in the brickwork and a control joint should be considered. Alternatively, strengthening the framing, using additional brick ties and in particular, using MASON’S 4mm Bricklock joint reinforcing in mortar joints in these areas, may be sufficient.

It is important to remember, that if a crack develops in an otherwise well-constructed brick veneer, it is an aesthetic issue only, and creates no problems as to weather tightness and has minimal effect on the overall integrity of the veneer. A control joint is in effect a controlled crack; and conversely, a crack is an uncontrolled ‘control joint’.

Control joints can be formed as in E2/AS1 using a backing rod and approved sealant. Alternatively, a straight saw cut will achieve the same outcome. It possible position control joints behind down pipes to hide them. Where a control joint is used, it is important to ensure that the framing details provide a stud within 200mm of each side of the joint for the fitting of brick ties.

1.7 Flashings

The brick veneer system has functioned in New Zealand very successfully for many years with minimal flashings being installed; however, in the modern environment, flashings are an essential part of any cladding system.

The most important flashings are around openings such as doors and windows; the head flashing being the critical element.

With the introduction of E2/AS1 in Dec. 2011, this solution does not allow for metal head flashings, which have been promoted by BN122 over the past 10 – 15 years. The only flashing materials permitted in the solution around window and door openings are: 1.5mm butyl rubber, 2 ply asphaltic pliable waterproofing membrane or 0.5mm pliable polyethylene – no width is specified.

An ‘Alternative Solution’ is a metal head flashing fixed to the framing. Ensure it is kept 5mm short at each end, and the ends of the flashing turned up. This will allow for any movement in the framing without interfering with the bricks. Any moisture that may enter the cavity at each end of the opening, between the brick and the head flashing, will be minor and captured by the jambs flashing. A 5 – 10mm gap between the underside of the lintel bar and the flashing, allows for both drainage and ventilation eliminating the need for weep holes in the bricks across the head of the opening.

Jamb flashings are simple and inexpensive. Use a 200mm wide Supercoarse 500 polyethylene flashing, tucked into the joinery flange. The open end of the flashing is to be held off the building wrap using a kick-out batten or protruding cluds. The junction between the bricks and the joinery does not need to be sealed. Note: the current E2/AS1 solution does not show a kick-out batten.

The sill flashing is equally important; any moisture driven up the sill brick needs to be stopped from reaching the timber framing and directed into the bottom of the cavity. Extend flashings 200mm past the sides of any openings where practical to do so.

1.8 Veneer Heights

The maximum height for single storey veneers adjacent to supporting timber framing, is 4.0m from the foundation. At the gable area you may go to a maximum of 5.5m to the apex.

To build to heights that exceed the above limitations, obtain a copy of Design Note TBN Two Storey Clay Brick Veneer Construction – Made Easy.

If the veneer is supported by a masonry structure, NZS4229 permits a veneer height of 6.0m for wall and up to 10.0m to the top of any gable.

2.0 Bricklaying

Requirements

2.1 General

It is important to remember that any issues regarding the quality, texture or colour of the bricks must be addressed with the brick supplier prior to the laying of the bricks. A brick laid is a brick accepted. Thoroughly check all pallets upon delivery.

Clay bricks marketed in New Zealand must meet the requirements of NZS5445, the manufacturing standard. This standard mainly refers to the size and compressive strength of the product. It does not mention, chipping, cracks, bowing or colour, all issues to do with whether a brick is considered a ‘First Grade’ product or a ‘Common’. This will vary depending on the texture and type of brick product, check with your brick supplier.

Clay bricks are transported great distances and may be handled many times prior to delivery to site. Minor edge chipping in some bricks can occur, especially smooth faced bricks; this is to be expected and managed by the bricklayer in the laying process.

Generally, A First Grade brick should have a face and one end free of surface defects; however the nature of the brick product being laid must always be a factor in this regard.

4 MIDLAND BRICK NZ

5 MIDLAND BRICK NZ
Brochures, websites, and display panels provide an indication of the brick product at the time they were created, which may be two years old. Clay bricks are a natural product that may change depending on where the clay is sourced and how it is fired at the time of manufacture – check with your brick supplier for recent product samples.

2.2 Blending

Brick is a finishing product and therefore it is essential that the bricklayer thoroughly blends the bricks in order that an even spread of colour is achieved over the face of the wall. Depending upon where the bricks were positioned in the kiln, will have a bearing on the colour of the brick, which is why it is important for the bricklayer to select bricks from at least 3 pallets to get as good a colour mix as he can. Step away from the wall and check regularly. Obvious pockets of colour on a brick wall are unacceptable and devalue the dwelling or building.

2.3 Keeping Bricks Dry

It is important to prevent bricks becoming saturated in the construction process, particularly during the winter months. Saturated brickwork can aggravate any salts that may be present, resulting in white deposits on the surface, which can be long-term. Therefore, keep the top of all pallets covered with plastic, and where bricks may be stacked around the site, cover with plastic.

Freshly laid veneers, (less than 6 hours) must be protected from rain to prevent a possible change in the mortar colour. The top row of all unfinished brickwork must be covered in plastic, if rain is imminent.

2.4 Brick Bonding

New Zealand Standards require for running or stretcher bond, which means that the units of each course overlap the units of the preceding course by between 25% and 75% of the length of the units. If you wish to ‘stack bond’ it must to done to a “Specific Design” which will invariably involve such things as stud at 400mm crs, the use of MASONs 4.0mm Bricklock joint reinforcement and more brick ties. A 70mm brick may be laid to a third bond (metric bond) however, it is recommended that bricks always be laid to a half-bond in the traditional manner. This can be easily achieved by cutting all (70mm Series) corner bricks to 190mm in length.

2.5 Brick Sills

With the introduction of E2/AS1, all sills including door sills are required to have a minimum slope of 15°. They do not need to overhang unless there are vent holes under the sill which is only required on sills over 2.4m long. Slope and overhang should be consistent for all sills. It is traditional to overhang the sill 30 – 50mm. Bricks must be evenly spread and of equal thickness of brick across the width of the sill. This applies to the heads of the windows as well.

2.6 Lintel Bars

There are two methods of installing ‘Lintel Bars’ – As required under E2/AS1, the traditional method, where the bar spans the brick from one side to the other, kept completely free of the structure and apply the angle sizes in Table 19E, E2/AS1 or the table below which is a simpler version covered by Specific Design in Design Note TB2. The lintel bar should sit 20mm back from the face of the veneer. The second method, an ‘Alternative Solution’, is to attach to the angle to the structure. In this case, keep the angle 5mm short of the opening at each end to accommodate any movement in the frame. Check durability requirement.

<table>
<thead>
<tr>
<th>Lintel bars supporting veneer over opening</th>
<th>Max Span (mm)</th>
<th>Size of Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000mm</td>
<td>80 x 80 x 6</td>
<td></td>
</tr>
<tr>
<td>3500mm</td>
<td>100 x 100 x 6</td>
<td>120 x 75 x 6</td>
</tr>
<tr>
<td>4500mm</td>
<td>125 x 75 x 8</td>
<td></td>
</tr>
<tr>
<td>6000mm</td>
<td>125 x 75 x 10</td>
<td></td>
</tr>
</tbody>
</table>

2.7 Mortar

Good quality mortar ensures a veneer that will perform well not only throughout the life of the cladding, but in the event of an earthquake. Mixing mortar by volume is essential, 4 buckets of sand to 1 bucket of cement is the normal mix ratio. The volume of water, additives, and mixing time, all need to be consistent to achieve a quality mortar of an even colour. The mortar should be as wet as practically possible to help achieve a good bond strength.

It is very important that ‘hydration’ takes place. If the mortar shows signs of powdering, it is possible that ‘hydration’ has not occurred and the veneer may need to be pulled down. The most common cause of this is rapid loss of moisture when the bricks are first laid. If the temperature exceeds 27°C, ensure the bricks are kept damp for the first 24 hours.

Discard mortar which is over an hour old and avoid re-tempering mortar with water. The correct time to tool a mortar joint is when a clear thumb print can be made on the surface.

2.8 Tolerances

<table>
<thead>
<tr>
<th>Item</th>
<th>Deviation from vertical within a story</th>
<th>Deviation from vertical in total height of building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance</td>
<td>10 mm per 3 m of height</td>
<td>20 mm</td>
</tr>
<tr>
<td>Relative vertical displacement between masonry courses</td>
<td>2 mm on nominated fair face (1 side) 5 mm on structural face</td>
<td></td>
</tr>
<tr>
<td>Deviation from line in plan:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) In any length up to 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) In any length over 10 m</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average thickness of bedding joint, cross joint or perpend joint</td>
<td>5 mm</td>
<td>+/- 3 mm on thickness specified</td>
</tr>
</tbody>
</table>

2.9 Cleaning

The brick veneer must be cleaned as the job progresses using clean sponges and clean water.

It is important to protect the brick veneer from becoming stained or marked, particularly by other trades during the construction period. Cover the brickwork around the water tap and ensure the hose is connected and away from the veneer.

Under no circumstances is the brickwork to be water-blasted using a high pressure system. If the bricks require a light acid wash, Corium 93 is specifically designed for this task; however, check with your brick company prior to applying any acid products to the bricks.

2.10 Flashings

It is the bricklayer’s responsibility to ensure that all flashings have been correctly installed prior to the bricks being laid. Refer to the figures in this brochure for the correct installation requirements.

2.11 Inspections

In house construction it is normal for the brick veneer to be inspected by the council building inspector once the bricks reach 2.4m from the ground. The inspection checking for deviation from the vertical in total height and deviation from vertical within a storey 10mm per 3m of height. The deposit of white salts on the surface of brickwork is common, and referred to as ‘efflorescence’. For efflorescence to occur, three conditions must exist. There must be salt present. There must be water entering the masonry, and the masonry must be able to dry out. The white salts must first be brushed off the surface using a stiff dry brush and the deposits collected where possible. The wall can then be wiped over with a damp cloth to remove some of the remaining deposits. This process may need repeating several times until all salts have been removed from the bricks. Do not hose off. Good laying practices help prevent efflorescence occurring.

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3.4 Manganese Stains

This stain occurs characteristically along the edges of grey or brown bricks that have been produced using manganese to achieve the colour. It appears as a dark-tinted brown discoloration. If you suspect that manganese staining has occurred, contact your brick company for them to inspect and advise on a resolution.

3.0 Brick Issues

3.1 Using Hydrochloric Acid

Check with your brick supplier prior to using hydrochloric acid to clean their bricks. When using hydrochloric acid it is important to adhere to the following procedures.

- Thoroughly pre-wet the wall before applying the acid.
- Do not exceed a mix strength of 1 part acid to 10 parts water.
- Allow the acid solution 3 – 6 minutes to do the job required.
- Manage a maximum of approximately 5m² at a time and wash down thoroughly with clean water on completion.

Note: iron Oxide stains must can be the result of using hydrochloric acid on clay bricks. This may be removed by applying a solution of 1 part phosphoric acid to 4 parts water; allow up to 24 hours to work.

3.2 Vanadium Stains

Vanadium is a naturally occurring salt in many types of clays, that may appear on the finished brick product, normally within the first 6 weeks of the brick being laid. The stain is quite vivid and comes in many colours from dark green, lime green, yellow, and reddish-brown; more obvious on light coloured bricks.

It will wash off over time, but an application of 4% Sodium Hypochlorite (Joranol) or alternatively, a solution of Sodium Bicarbonate, 60gms/litre of water; applied on the stains will assist in their removal.

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3.5 Copper and Bronze Stains

Often brick veneer has cap flashings or is in close proximity to metals such as copper or bronze. Water washing over these metal surfaces can result in a bluish-green stain appearing on the surface of the bricks. These stains may be removed using a solution of 1 part by volume of acetic acid (80% or stronger); 1 part hydrogen peroxide (30% - 35% strength); 6 parts water.

3.6 Smoke stains

Common around domestic fireplaces, but can also be an issue with fire damaged buildings. Minor stains can be removed readily with sugar of soap, which is highly alkaline mixture. Mix approximately 500 gms into 2 litres of hot water and apply liberally by brush. After the stains disappear scrub with a mixture of detergent and household scouring powder containing sodium hypochlorite (Jariol) after the stains disappear.

3.7 Graffiti

These are difficult stains to remove, particularly if they have aged. In the case of fresh aerosol paint a proprietary paint remover can be used, and a water rinsible type is recommended. Commercial paint removers, applicable to a particular type of paint, can be used satisfactorily. To remove dried paint, the stained area is flooded for a few minutes with a paint remover of the methylene dichloride type, scrubbed to loosen the paint film and then flushed with water to wash away the loosened paint. Final scrubbing is done with a scouring powder until the stain is removed.

For specialist advice or assistance contact a commercial company such as Graffiti Solutions Ltd, www.graffitisolutions.co.nz

5.0 Brick Walls

Fundamental rules for brick walls

- Avoid filling columns with reinforced concrete. Always support fences and brick columns using timber or galvanised metal posts upon which the bricks can be tied.
- The foundation needs to be 150 – 200mm deep and a minimum of 50mm wider on each side of the brick line. It should contain a minimum of 2/3/12 rods. Check for tree roots and either remove or bridge the roots using a flat galvanised steel plate.
- On a single skinned wall, keep the columns approximately 2.0m apart and the H4 posts at least 800mm into the ground.
- Use Bricklock STR joint reinforcement every 4th course extending it through and tying it to the posts.
- On columns, use Bricklock CNR every 4th course through the height of the column. Tie the bricks in the column to the post, also every 4th course opposite each other, alternating around the column.
- Double skinned walls need to be tied together using rectangular box ties every 4th course at 600mm centres. Incorporate 100 x 74 H4 posts and rails in the cavity to also tie the bricks.
- Check with your council on height limits and building consents.

**For further information please refer to www.brickconsultant.co.nz**
Brick veneer has been in the New Zealand market, and an acceptable method of cladding a dwelling or building, since at least NZS1900, introduced in 1964.

Brick veneer until recent times, has always been associated with the light timber framing standards, and in particular NZS3604. However, with the revision of NZS3604 in 2011, it was decided to remove the brick veneer from this document and represent it in the Building Code along with other claddings under External Moisture (E2) in the form of an ‘Acceptable Solution’ for Masonry Veneers, known as E2/AS1 Masonry. It should be noted that the ‘Acceptable Solution’ incorporates the Materials and Workmanship standard NZS4210:2001.

If you design and build exactly to the specification provided in any ‘Acceptable Solution’, it will be approved as compliant by the Building Consent Authority (BCA) in whose area the masonry veneer is being constructed. A Licenced Building Practitioner (LBP), which can be the bricklayer or the builder, can then sign the Record of Works (RoW) as being compliant with E2/AS1 Masonry. When you have a detailed descriptive solution such as E2/AS1 Masonry, to acknowledge compliance with the Building Code, it must be followed to the letter, which may be extremely difficult to achieve just from a practical building perspective alone. A simple example would be; mortar joints must be between 7 and 13mm in thickness. If a joint was found to be 6mm or 14mm you could not sign the veneer off as being compliant with E2/AS1 Masonry. What happens now? If the project has been designed and built using a ‘Specific Design’ supplied by an appropriately qualified and or experienced person, acceptable to the BCA, then that is one approach in seeking compliance. If one is designing and building to E2/AS1 Masonry, and there is an item or items that do not comply with the ‘Acceptable Solution’, but would still meet the Building Code or its intent, one can submit to the BCA in writing an ‘Alternative Solution’ to the method prescribed in E2/AS1 Masonry. This may be done by way of a letter, a Producer Statement, or a Design Certificate from a suitably qualified or experienced person who is registered with the BCA; and depending on what the change is a revised Certificate of Works (CoW) may also be required. The Ministry of Business Innovation and Employment (MBIE) have on their website a set criteria for documenting alternative solutions. What is important however is that you receive acceptance of this solution in writing from the BCA, verbal approval is unacceptable and readily forgotten! Note: When the BCA approve ‘Alternative Solutions’ they should be and invariable are, site specific and relative only to the building consent involved.

External Moisture – Acceptable Solution 1
E2/AS1 Masonry (Dec. 2011)

Comment & Details

How to build compliant brick veneers

When you have a detailed descriptive solution such as E2/AS1 Masonry, to acknowledge compliance with the Building Code, it must be followed to the letter, which may be extremely difficult to achieve just from a practical building perspective alone. A simple example would be; mortar joints must be between 7 and 13mm in thickness. If a joint was found to be 6mm or 14mm you could not sign the veneer off as being compliant with E2/AS1, there is no such thing as it ‘nearly complies’!

If you are building to E2/AS1 Masonry, and for whatever reason, an item, detail or aspect of the veneer will not or does not meet the requirements of the ‘Acceptable Solution’, this does not mean to say that the veneer does not comply with the Building Code, and in particular, sections B1, B2, E2; it just means it does not meet the conditions presented in the ‘Acceptable Solution’ for masonry veneers.
EXTERNAL MOISTURE - ACCEPTABLE SOLUTION 1 (E2/AS1) MASONRY (DEC. 2011)

HEIGHT LIMITS - CONSTRUCTION OPTIONS

A. 1 STOREY

D. 1 STOREY WITH PART STOREY

B. 2 STOREY ON MASONRY

C. 2 STOREY VENEER

EXTERNAL MOISTURE - ACCEPTABLE SOLUTION 1 (E2/AS1) MASONRY (DEC. 2011)

MASSONRY VENEER WINDOW AND DOOR INSTALLATION

E. HEAD

F. SILL

G. JAMB
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