BORAL STONE
Build something great™

Cultured Stone®

TECHNICAL INFORMATION **GUIDE**

www.boral.com.au/stone

July 2013

Contents

Introduction

Cultured Stone® Installation Guide can also be found at www.boral.com.au/stone

Building code requirements may vary from area to area. Check with local authorities for building code requirements in your area. Carefully read all information contained in the technical installation guide before proceeding with your Cultured Stone® cladding application. Observe safety precautions. Cultured Stone® products are covered by a 50-Year Warranty.

Please refer to the full Warranty available at the time of supply.

Important

Boral accepts no responsibility or liability for the contents of the guide (including any printing or typographical errors) and recommends that all standards, specifications and recommendations be independently checked.

It is to be understood that the requirements and methods detailed in this guide are current at the time of printing. However, they may be modified or completely changed to suit improved techniques or new designs in the future.

Photographer: Matthew Mallett

Dressed Fieldstone in Chardonnay

Estimating Stone Required

To determine the amount of Cultured Stone® cladding needed, measure the area to be covered. Measure the length times the height to arrive at the gross square meterage of flat stone needed. Subtract square meterage for windows, doors and other openings. Measure the linear metres of outside corners to determine the amount of corner pieces needed.

One linear metre of corner pieces covers approximately 0.25 square metres of flat area. Subtract the flat area covered by the linear metres of corner pieces from the square meterage of flat stone required.

Be sure to verify whether the texture chosen is sold based on coverage with a 12mm mortar joint or tight-fitted. Most texture coverages are listed for a 12mm joint, the exceptions being European Castle Stone, Pro-Fit® Ledgestone and Pro-Fit® Alpine Ledgestone. Refer to table below for standard allowances.

Tip:

It is recommended that you over-order by a small percentage on the total job to allow for cutting, trimming and to ensure that there is an adequate assortment of stone pieces left to complete the job to a high aesthetic standard. Refer to table below.

Table 1: **Standard Allowances** for Cutting, Trimming and Joint Width

Profile	Standard Joint	Tight Fitted Joint
Country Ledgestone	5%	15%
Pro-Fit Alpine Ledgestone	5%	5%
Pro-Fit Ledgestone	5%	5%
Southern Ledgestone	5%	25%
Cobblefield	5%	15%
European Castle Stone	5%	5%
Dressed Fieldstone	5%	15%
Coral Stone	5%	10%
Cast Fit	5%	10%

How To Estimate Total Stone Required

Formula:

Total stone required = (wall area) - (window + door area) - (wall area covered by corners).

- Wall area = wall length x wall height.
- Window + door area = (window length x window height) + (door length x door height)

Note:

Repeat for each window and door on facade to which Cultured Stone® is to be applied.

- Wall area covered by corners = lineal metres of corners x 0.25

Tip:

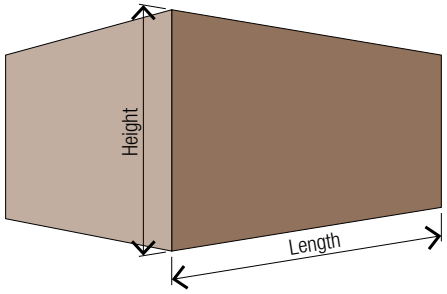
If you are installing a texture which states coverage is for 12mm mortar joint, in a tight fit application, increase stone by 10-22%

Note:

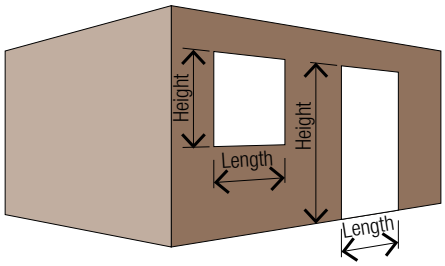
Cultured Stone® is sold in cartons containing 0.83 to 1.2 square metres of Flats and 2.44 lineal metres of Corners, depending on the selected profile.

Estimating Details

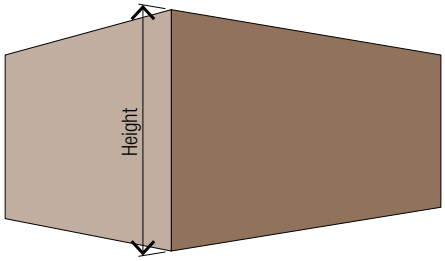
1. Wall Area



2. Window and Door Area



3. Corners Required



Materials and Tools Required

Mortar Components

- Primer mix as per page 10
- Standard mortar mix as per page 10
- Mortar colour: iron oxide colour (if desired)
- Water: potable water.

Water Resistive Barrier (WRB)

The barrier must meet the requirements of:

- AS4200-1 Pliable Building Membranes and Underlays – Materials
- AS4200-1 Pliable Building Membranes and Underlays – Installation Requirements.

Installation of the WRB should follow instructions provided by specific manufacturer.

Note:
The WRB must be used on all exterior applications. The WRB is not required for application over masonry or concrete.

Flashing

- To maintain the weather-resistance of the exterior wall on which stone products are installed, corrosion resistant flashing or weep screed and a means of drainage must be installed at all penetrations and terminations of the stone cladding. Flashing type and locations must be in accordance with the requirements of the applicable building code.
- For additional recommendations, refer to the following resources:
  - Building Code of Australia
  - Architect or Engineer.

Expanded Metal Mesh

Self-furring expanded metal mesh

- Galvanised
- Profile “Raised” not “Flattened”
- 0.35mm Thickness
- 1.5mm Stand Width
- 13mm SWM (Short Way Measurement)
- 33mm LWM (Long Way Measurement).

Note:
Expanded metal mesh is directional. When installed, the mesh should be rough when running your hand down the wall, and smooth when running your hand up the wall.

Fasteners

- Timber: Galvanised clouts (40mm) or sufficient to penetrate studs by 25mm minimum.
- Timber: Corrosion-resistant, exterior grade wood screw or tek screw, of 40mm length or sufficient to penetrate studs by 25mm minimum.
- Metal: Corrosion-resistant, self-drilling, self-tapping tek screw or pancake head screw, suitable to obtain 10mm penetration beyond inside surface of metal (used for installing to metal surfaces such as metal studs).
- Ramset suredrive or equivalent.

Masonry Sealer

Silane-based breather-type sealer (if required). See “Sealers” in General Information section, page 16.

Tools

Choose the tools required for your installation:

- Safety glasses and other personal protective equipment
- Screw gun or hammer
- Hawk and trowel
- Diamond trowel
- Gauging trowel
- Masonry wet saw or grinder with carborundum or diamond blade
- Wide-mouth nippers or masonry axe
- Dust mask
  (refer to safety disclaimer regarding cutting page 38)
- Level
- Metal jointing tool (small tool) or kitchen butter knife
- Wood stick or bamboo chopstick
- Grout bag
- Whisk broom or stiff bristled nylon brush
- Cement mixer or mixing drill and paddle
- Wheelbarrow and hoe.

Typical Installations

Timber Frame (Refer Figure 10 & 11 - page 17)

In sequence:

1 Water Resistive Barrier (WRB).
2 Fibre cement sheet.
3 Prime all surfaces with primer mix.
4 Expanded metal mesh.
5 Mortar/scratch coat/setting bed.
6 Cultured Stone® cladding.
7 Mortar joint.

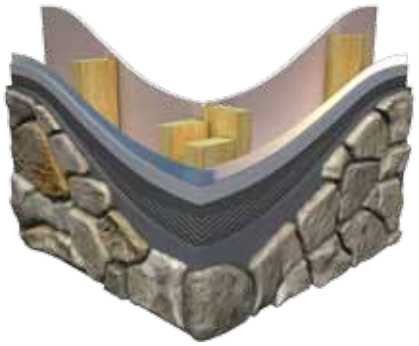


Figure 1: **Cultured Stone® on Timber Frame**

Brick or Block Work (Refer Figure 17 & 18 - page 21)

In sequence:

1 Primer applied directly to untreated, unpainted masonry or concrete.
2 Mortar.
3 Cultured Stone® cladding.
4 Mortar joint.

Figure 2: **Cultured Stone® on Brick or Block Work**

Tilt or Pre-Cast Panel (Refer Figure 22 & 23 - page 24)

In sequence:

1 Acid etch to remove all release products.
2 Prime all surfaces with primer mix.
3 Expanded metal mesh.
4 Mortar.
5 Cultured Stone® cladding.
6 Mortar joint.

Figure 3: **Cultured Stone® on Pre-Cast Panel**

Float and Set (Refer Figure 19 & 20 - page 22)

(Existing) Internal Brick or Block Work Wall

In sequence:

1 Prime all surfaces with primer mix.
2 Expanded metal mesh.
3 Mortar.
4 Cultured Stone® cladding.
5 Mortar joint.

Figure 4: **Cultured Stone® on Float and Set**

Note:
If your application does not meet above typical installations, contact your Boral representative for specific advice.

Surface Preparation

Timber Frame

Please read the manufacturers cement sheet specification. Fibre cement sheet manufacturers do not warrant gluing directly onto cement sheet. Boral recommends the following:

1 Set 90 x 45 studs at 450mm centres.

2 Fix water resistive barrier to frame. Installation of the WRB should follow instructions provided by specific manufacturer, and depending on local building code requirements, barrier shall meet the requirements of:

- AS4200-1 Pliable Building Membranes and Underlays – Materials
- AS4200-1 Pliable Building Membranes and Underlays – Installation Requirements.

3 Fix minimum 6mm thick fibre cement sheet to manufacturers specifications. When installing the fibre cement sheet, Boral recommends all sheets be fitted horizontally, not vertically. Stagger vertical joints, so they are not continuous. Ensure all joints in the fibre cement sheet are over studs or noggins. No joints should be made above the edges of windows or doors.

4 Prime all surfaces with primer mix.

5 Using 40mm galvanised clouts or screws, affix expanded metal mesh at 150mm centres vertically. All laps should be a minimum of 50mm vertically and 25mm horizontally. Corner wraps are to be continuous and should wrap a minimum of 450mm around corners to a framing member or stud. Note the correct side up in the form of the mesh, this is to aid in catching the mortar. When installed, the mesh should be rough when running your hand down the wall, and smooth when running your hand up the wall.

6 Trowel mortar over the face of the expanded metal, ensuring the entire area is covered. Mortar thickness required is 12-19mm. Allow mortar to dry before applying Cultured Stone® (refer Figure 10 - page 17).

7 Expansion joints should be incorporated every 4 metres.

Brick or Block Work

1 All surfaces are to be free of bond breaker, dust, loose aggregate, grease, paint or similar.

2 All surfaces are to be dry and of a sound stable structure.

3 Prime all surfaces with primer mix.

4 Caulk all expansion joints.

5 Expansion joints are to be left exposed. Do not apply Cultured Stone® over expansion joints or weep holes (refer Figure 12 page 21).

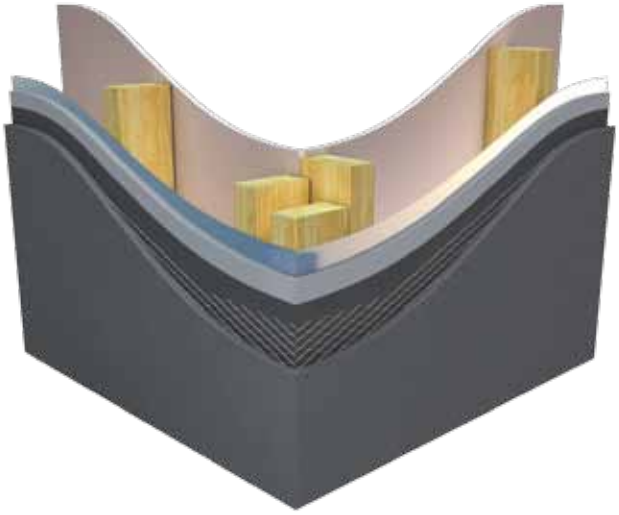


Figure 5: **Cultured Stone® on Timber Frame**

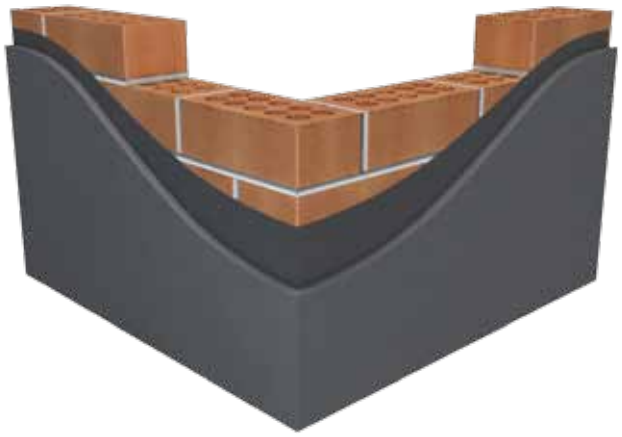


Figure 6 : **Cultured Stone® on Brick or Block Work**

» Surface Preparation

Tilt or Pre-Cast Panel

1 Tilt Panel surfaces are to be free of bond breaker, dust, loose aggregate, grease, paint or similar.

2 All surfaces are to be dry and out of a stable structure.

3 Tilt up panel – acid etch to remove all release products.

4 Prime all surfaces with primer mix.

5 Affix expanded metal mesh at 150mm centres vertically and 400mm centres horizontally using 30mm Ramset ShureDrive Anchors (or similar equivalent). All laps should be a minimum of 50mm vertically and 25mm horizontally. Corner wraps are to be continuous, and should return around a corner a minimum 450mm. Note the correct side up in the form of the mesh; this is to aid in catching the mortar. When installed, the mesh should be rough when running your hand down the wall, and smooth when running your hand up the wall.

6 Trowel mortar over the face of the expanded metal, ensuring the entire area is covered. Mortar thickness required is 12-19mm. Allow mortar to dry before applying Cultured Stone®.

7 Caulk all expansion joints.

8 Expansion joints are to be left exposed. Do not apply Cultured Stone® over expansion joints or weep holes (refer Figure 22 - page 24).

Float and Set

(Existing) Internal Brick or Block Work Wall

1 Set surface to be free of loose paint, dust, grease or similar.

2 Surface to be dry and of a stable structure.

3 Prime all surfaces with primer mix.

4 Affix expanded metal mesh at 150mm centres vertically and 400mm centres horizontally using 30mm Ramset ShureDrive Anchors (or similar equivalent). All laps should be a minimum of 50mm vertically and 25mm horizontally. Corner wraps are to be continuous, and should return around a corner a minimum 450mm. Note the correct side up in the form of the mesh; this is to aid in catching the mortar. When installed, the mesh should be rough when running your hand down the wall, and smooth when running your hand up the wall.

5 Trowel mortar over the face of the expanded metal, ensuring the entire area is covered. Mortar thickness required is 12-19mm. Allow mortar to dry before applying Cultured Stone® (refer Figure 20 - page 22).

6 Expansion joints should be incorporated every 4 metres.

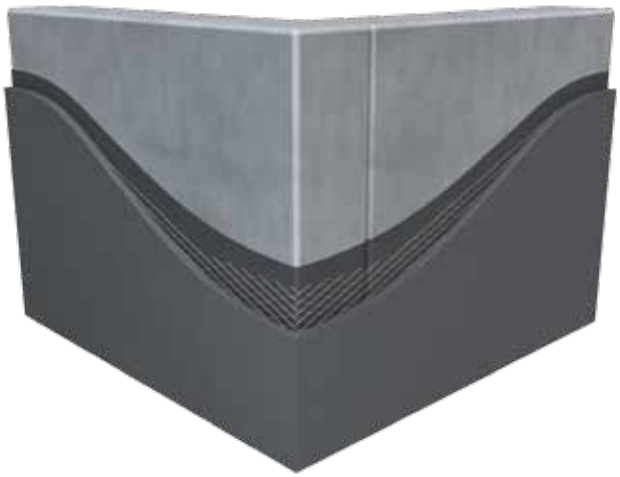


Figure 7: **Cultured Stone® on Pre-Cast Panel**

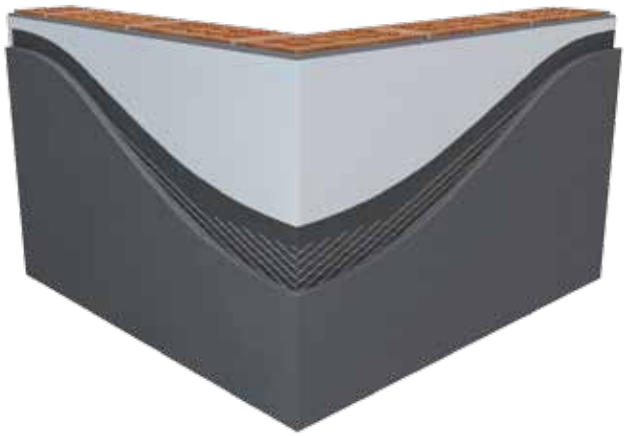


Figure 8: **Cultured Stone® on Float and Set**

Important Note:
It becomes the responsibility of the independent installer to ensure the structure upon which Cultured Stone® is being installed is structurally sound, and sufficient to sustain the weight of the Cultured Stone® product.
For weight calculations; allow 70kg per square metre including mortar, fibre cement sheet (6mm thick) and Cultured Stone®.

Water Resistive Barrier (WRB)

When installing manufactured stone cladding in an exterior application requiring a WRB; The barrier must meet the requirements of:

- AS4200-1 Pliable Building Membranes and Underlays – Materials
- AS4200-1 Pliable Building Membranes and Underlays – Installation Requirements.

Installation of the WRB should follow instructions provided by specific manufacturer.

Note:
The WRB must be used on all exterior and interior mortar applications. The WRB is not required for application over masonry or concrete.

Expanded Metal Mesh Preparation

The expanded metal mesh must continuously wrap a minimum of 450mm at outside and inside corners and fasten at a framing member. Lap expanded metal mesh a minimum of 50mm at vertical and 25mm at horizontal lap joints.

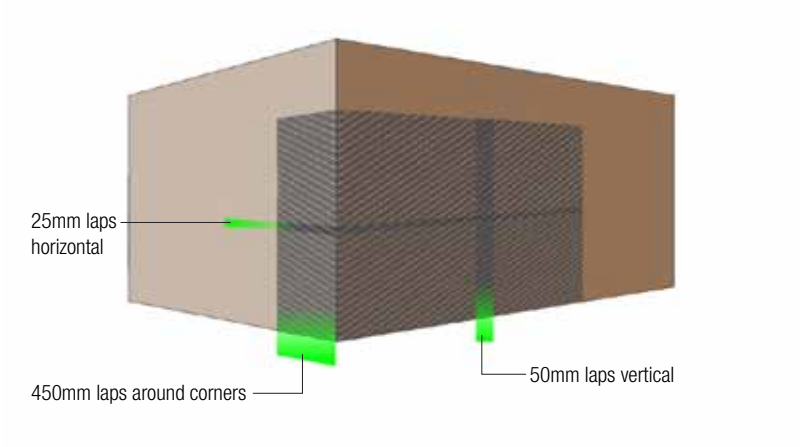


Figure 9: **Correct Expanded Metal Mesh Layout**

Primer and Mortar Mix

Primer

Primer Mix:

- 4 parts Boral Cemstik (bonding agent)
- 2 parts water
- 1 part General Purpose Portland Cement.

Mixing Primer:

Mix Boral Cemstik and water, add cement and mix to a milky paste.

Applying Primer to Substrate

Apply primer mix with a brush or roller to the wall face where Cultured Stone® will be installed.

Note:
To achieve the best adhesion apply Cultured Stone® whilst the primer is moist.

Tip:
Typically allow one litre of Boral Cemstik per square metre of wall area

Important Note:
Wherever "Boral Cemstik" is mentioned in this guide, alternative product can be used where it has similar performance characteristics.

Mortar

Cultured Stone® Standard Mortar Mix:

- 2 parts* washed sand, (sand is to be low in clay content)
- 1 part* general purpose Portland cement
- 2 litres of Boral Cemstik (bonding agent)
- Add water to desired consistency
- Colour oxide (if desired), no greater than 8.3% of cement content

*Use a 9 litre bucket to measure one part

Tip:
If being installed over concrete, masonry or scratch coat substrate, the substrate surface area should also be dampened before applying mortar. Surfaces should appear damp but free of surface water.

Weather Conditions

Applications should be protected from temperatures below 5° Celsius as mortar will not cure properly under such conditions.

Do not use antifreeze compounds to lower the freezing point of mortar.

Mixing Mortar/Grout

Using Cultured Stone® standard mortar mix, mix to a firm, moist consistency. Mortar that is too dry and crumbly will not provide proper bond. Mortar that is too wet will be weak and untidy.

Mortar Colour

Mortar colour complements the colour of the stone being installed. Example: Use tan mortar with earth-tone stones. This will greatly enhance the appearance of the finished installation. Regular mortars can be coloured to complement your Cultured Stone® cladding using iron oxide pigments.

Applying Mortar to Prepared Surface Area

Using a hawk and trowel apply mortar 12mm to 19mm thick to prepared surface area. Do not spread more than a workable area (1-2 square metres) so that mortar will not "set up" or "harden" before stone is applied.

Application

Prepare Your Work Area

Tip:
Spread Cultured Stone® cladding out at the job site so you have a good variety of sizes, shapes and colours to choose from.

Plan for some variety and contrast in the overall design. Use small stones next to large ones, heavy-textured pieces next to smooth, thick stones next to thinner ones. Mixing Cultured Stone® cladding from different boxes during application will allow you to achieve a desirable balance of stones on your finished project.

Applying Cultured Stone® Cladding

See page 15 for additional instructions concerning Pro-Fit™ Ledgestone, Pro-Fit™ Alpine Ledgestone and European Castle Stone.

Starting Point

Apply mortar and stone cladding working from the bottom up, or from the top down.

Tip:
Working from the top down may help avoid splashing previously applied stone with dripping mortar. Ledgestone types should be installed from the bottom up.

Joint Width

In order to obtain the most natural look, joints should be as narrow as possible. The average should not exceed 12mm in width. An attractive look can also be achieved by fitting stones tightly together if desired. If using tight fit/drystack method, it is important to make sure scratch coat/backing has been covered completely by the setting bed of mortar. This will conceal the scratch coat/backing and prevent pockets from forming behind stones that could trap water.

Setting the Stone Cladding

Press each stone into the mortar setting bed firmly enough to squeeze some mortar out around the stone's edges. Apply pressure to the stone to ensure a good bond. Ensure complete coverage between the mortar bed and back surface of the stone. Mortar may also be applied to the entire back of the stone.

Tip:
When stone cladding is installed correctly, fibre cement sheet, expanded metal mesh or brickwork will not be visible.

The mortar setting bed shall be between 10mm minimum and 35mm maximum. Care must be taken to avoid smearing mortar on surface of the stone cladding.

Tip:
Accidental smears or mortar droppings should be removed using a whisk broom or stiff bristled nylon brush only after mortar has become crumbly.

Install Corner Pieces

If your application requires corner pieces, apply these first. Notice that the corner pieces have a long and a short leg. Alternate these in opposite directions.

Install Flat Pieces

After the corner pieces are in place, flat pieces are applied working toward the wall centre.

Keep Your Mortar Joints Consistent

Place the individual stones close together, creating uniform joints between them. Cut and trim stones as required to achieve consistent width in the mortar joints. Then trim and fit small pieces into any remaining voids.

» Application

Cutting and Trimming

Stones can be cut and shaped for fit using wide-mouth nippers, masonry axe, wet saw or angle grinder equipped with a dry cutting diamond or carborundum blade. Some broken stones may be found in the box. These also may be used in filling gaps and used for cuts.

Tip:

For best finished appearance, coat cut or broken edges with mortar. If possible, position cut edges up when they are above eye level or down when below eye level. Place finished edges at exposed areas. Place cut edges within courses.

Note:
Refer to page 38 - General Notes to Installer.

Level and Plumb Joint Lines

When applying Cobblefield™, European Castle Stone, Limestone, Rockface, Coral or Ledgestone, endeavour to maintain level and plumb joint lines. Also, long rectangular pieces will look most natural if applied horizontally.

Ledgestone Types

When applying Ledgestone types, keep joints as small as possible to maintain a natural look, and install from the bottom up. Strike joints deeply, being careful not to expose the back edge of stones or scratch coat/backing. See page 15 for additional instructions regarding Pro-Fit™ Ledgestone, Pro-Fit™ Alpine Ledgestone and European Castle Stone.

Note:
Refer to Cultured Stone® Installation video for further information (www.boral.com.au/stone).

Grouting and Finishing Joints

Grouting Joints

If additional mortar is required, use a grout bag to fill in joints. Care must be taken to avoid smearing mortar on surface of stone.

Tip:

Accidental smears or mortar droppings should be removed only after mortar has become crumbly using a whisk broom or stiff bristled nylon brush. Never use a wet brush or wire brush.

Finishing Joints

When the mortar joints have become firm or “thumb-print” dry (setting time will vary depending on wall surface and climatic conditions), they should be pointed up with a wood stick, bamboo chopstick (for tight joints) or metal jointing tool/kitchen butter knife. Rake out excess mortar, compact and seal edges around stones. Careful attention to proper and even jointing will result in a professional looking finish.

Cleaning Finished Job

At the end of the work day, or when mortar is sufficiently set up, the finished job should be broomed or brushed to remove loose mortar and to clean the face of the stone.

Tip:

A wet brush or sponge should never be used to treat the mortar joints as this will cause staining that will be difficult, or impossible, to remove. Do not use acid or acid-based products.

Note:
Refer to Cultured Stone® Installation video for further information (www.boral.com.au/stone).

Surface Cleaning

Care must be taken to avoid smearing mortar on the surface of components. Accidental smears or mortar droppings should be removed with a whisk broom or dry bristle brush only after mortar has become crumbly.

Note:
Do not use a wet brush, sponge or a wire brush. Do not use acid or acid-based products, power-washing, sandblasting or wire-brush cleaning.

» Application

Watertable/Sill Installations

Watertables/sills provide a transition piece between a stone wainscot and other exterior finishes and for water runoff. They can also be used as a windowsill. Install using galvanised metal support brackets with holding capacity minimum 25kg per lineal metre fastened with galvanised nails or screws penetrating studs 25mm at a minimum of 400mm centres.

Two brackets per sill is preferred if noggins are present. Use construction adhesive to bond stone at bracket locations. Caulk and flash as required at Watertable/Sill locations using an approved corrosion resistive flashing that extends to the surface of exterior wall finish and is installed to prevent water from re-entering the exterior wall envelope. Failure to properly caulk/flash as described in these installation directions may result in water damage to the structure (refer Figure 24 & 25 - page 25 and Figure 38 - page 32).

Note:
Refer to Cultured Stone® Installation video for further information (www.boral.com.au/stone).

Installing Stone Cladding At Ground Level

If installing to a lightweight substrate, keep the finished edge of the Cultured Stone® cladding a minimum of 100mm above grade if earth or 50mm above pavement or concrete. Use a 50mm x 100mm levelling strip (straightedge) or weep screed / flashing.

Water Features

Similar to other stone cladding products, Boral does not recommend using Cultured Stone® cladding for water feature applications. However, some applications may be suitable. Refer to your local representative.

Exterior Application Notes

Make sure that the application of Cultured Stone® cladding and the structure they are being applied to incorporate good building practices. Rigid, corrosion-resistant flashing shall be installed at all wall penetrations. Flashing type and locations shall be in accordance with the requirements of the applicable building code. On exterior applications, the incorrect installation or absence of flashing, gutters and downpipes may result in diversion of water run-off onto finished surface areas. Masonry and other building products subjected to these conditions may develop staining and, when combined with severe freeze-thaw conditions, may eventually cause damage. The application of Cultured Stone® cladding under these conditions is not recommended.

Installation Over Foam

Installation over foam board thicker than 12mm may require special fasteners. Consult your architect or engineer for assistance designing a thick foam installation.

Capping Off Exposed Top of Exterior Walls

To achieve a finished architectural look on horizontal or sloping top areas of exterior walls, piers, retaining walls or other surfaces, Cultured Stone® Capstones or a poured in-place concrete cap must be used to provide adequate run-off protection to the wall areas. Caps should extend approximately 25-50mm beyond the finished stone surface.

Cultured Stone® corner pieces, flat pieces, or hearthstones should not be used to cap walls.

Retaining Walls

All retaining walls must be waterproofed at the fill side. The wall construction should incorporate proper use of granular backfill and provisions for good drainage. A continuous longitudinal drain along the back of the wall set in drainage aggregate is recommended.

Chimney Cap

All chimney chases must be capped with a cap that extends 25-50mm beyond the finished stone surface to prevent water from entering the wall system. Chimney or chase construction should incorporate proper flashing.

Additional Instructions

Applicable for:

- **Pro-Fit™ Ledgestone,**
- **Pro-Fit™ Alpine Ledgestone**
- **European Castle Stone**

Fitting the Joints

Install Pro-Fit™ Ledgestone, Pro-Fit™ Alpine Ledgestone and European Castle Stone products with tight-fitted joints. Generally, components should be placed butting each other and aligned for level and plumb. When installing, the backs of all these components must be wet. They should be noticeably damp, but free from surface water. Mortar can be tinted to match the colour of the stone you are installing to help conceal the joint lines.

Starting Point

Pro-Fit™ Ledgestone, Pro-Fit™ Alpine Ledgestone and European Castle Stone are applied starting from the bottom and working up. Start each course level and continue horizontally completing each course before starting the next. European Castle Stone is done in a similar sequence to achieve a random ashlar pattern.
If required, cut the appropriate size component to fit at the end or top of the finished area. Frequently check the installation for level and alignment.

Install Corner Pieces First

If your application requires corner pieces, start by installing a corner piece first, followed by the adjoining flat pieces. Notice that the corner pieces have a long and short leg. Alternate these in opposite directions.

Setting the Stone Cladding

Press each stone into the mortar setting bed firmly enough to squeeze some mortar out around the mortar groove at the back edge of component. Apply pressure to the component to ensure a good bond. Ensure complete coverage between the mortar bed and back surface of stone. Mortar may also be applied to the entire back of the stone. Check for level and plumb.

Install Flat Pieces

After the first corner piece is in place, the adjoining flat pieces of each course or pattern are applied. Using a trowel, strike off the excess mortar around the edges of the component prior to placing the next component. This will allow the next adjacent component to fit tightly. Choose the correct length component to ensure that vertical joints do not line up.

Cutting and Trimming

Vertical or horizontal cuts can be made using wide-mouth nippers, masonry axe, wet saw or angle grinder equipped with a dry cutting diamond or carborundum blade.

Some broken stones may be found in the box. These also may be used in filling gaps and used for cuts. For best finished appearance, coat cut or broken edges with mortar. If possible, position cut edges up when they are above eye level or down when below eye level. Place finished edges at exposed areas. Place cut edges within courses.

Note:
Refer to page 38 - General Notes to Installer.

Finishing Joints

The design simplicity of Pro-Fit™ Ledgestone, Pro-Fit™ Alpine Ledgestone and European Castle Stone allows for easy installation of components and provides a finished, tight fit joint between the stones. This reduces the time required for cutting, grouting and jointing.

Surface Cleaning

Care must be taken to avoid smearing mortar on the surface of components. Accidental smears or mortar droppings should be removed with a whisk broom or dry bristle brush only after mortar has become crumbly.

Note:
Do not use a wet brush, sponge or a wire brush. Do not use acid or acid-based products, power-washing, sandblasting or wire-brush cleaning.

General Information

Cleaning

Dirt may be removed by using a strong solution of granulated soap or detergent and water with a stiff bristle nylon brush.

Tip:
Do not use a wire brush as it will cause damage to the surface.

Rinse immediately with fresh water. For help with serious cleaning problems, contact your local Boral representative.

Tip:
Do not attempt to clean using acid or acid containing products, power-washing, sandblasting or wire brush cleaning.

Salt and De-Icing Chemicals

Concrete and masonry are vulnerable to damage by salt, Cultured Stone® cladding is not warranted against damage incurred from salt or other chemicals used to remove snow or ice. Do not use de-icing chemicals on areas immediately adjacent to a Cultured Stone® cladding application.

Scuffing

Scuffing occurs on all natural stone. Occasionally some scuffing will occur on the surface of Cultured Stone® cladding. This can enhance the natural appearance of your Cultured Stone® cladding installation. Some scuff marks can be removed by cleaning as described above.

Efflorescence

Efflorescence is a water-soluble salt that is deposited on the surface of stucco, concrete, brick and other masonry products by the evaporation of water from the wall. On rare occasions efflorescence will occur on Cultured Stone® cladding. To remove efflorescence, allow the stone to dry thoroughly, then scrub vigorously with a stiff bristle nylon brush. For unusually difficult cleaning problems, contact your local Boral representative.

Note:
Do not use a wire brush.

Sealers

Sealers are not necessary on Cultured Stone® cladding. However, some customers use sealers to help prevent staining in applications prone to smoke, soot, dirt or water splashing. If you choose to use a sealer, make sure it is a silane-based, breathable sealer. Take note that sealers may darken the colour of the stone. A sealer may also slow the natural movement of moisture out of the stone and increase the possibility of efflorescence and/or spalling. For information regarding actual performance or application of sealers, contact the manufacturer of the sealer directly.

Cultured Stone® Below Water Level

Cultured Stone® cladding is a lightweight concrete material and will not deteriorate from exposure to fresh liquid water.

Tip:
The use of Cultured Stone® cladding below water level, in which the water is chlorinated, treated with chemicals or dirty will likely cause discolouration as it would on any concrete, natural stone or other materials.

Pool chemicals which contain acid, such as muriatic acid, may cause damage to Cultured Stone® cladding. Cultured Stone® cladding, concrete and many natural stone materials are subject to potential damage from adverse freeze thaw conditions. For that reason, water should be drained below susceptible materials prior to freezing temperatures. Pressure and abrasion from constant fast flowing water may cause some surface deterioration as it would on other concrete materials. The surfaces of concrete and many other materials may be affected by exposure to extensive salt-water conditions. Cultured Stone® cladding should not be considered a waterproof material.

Building Code Requirements

Building code requirements can vary from area to area. Check with local authorities for building code requirements in your area. Carefully read all Installation Instructions before proceeding with your Cultured Stone® cladding application.

Cultured Stone® Warranty

For product Warranty information on Cultured Stone®, please refer to the full Warranty available at the time of supply.

Design Details

Lightweight Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

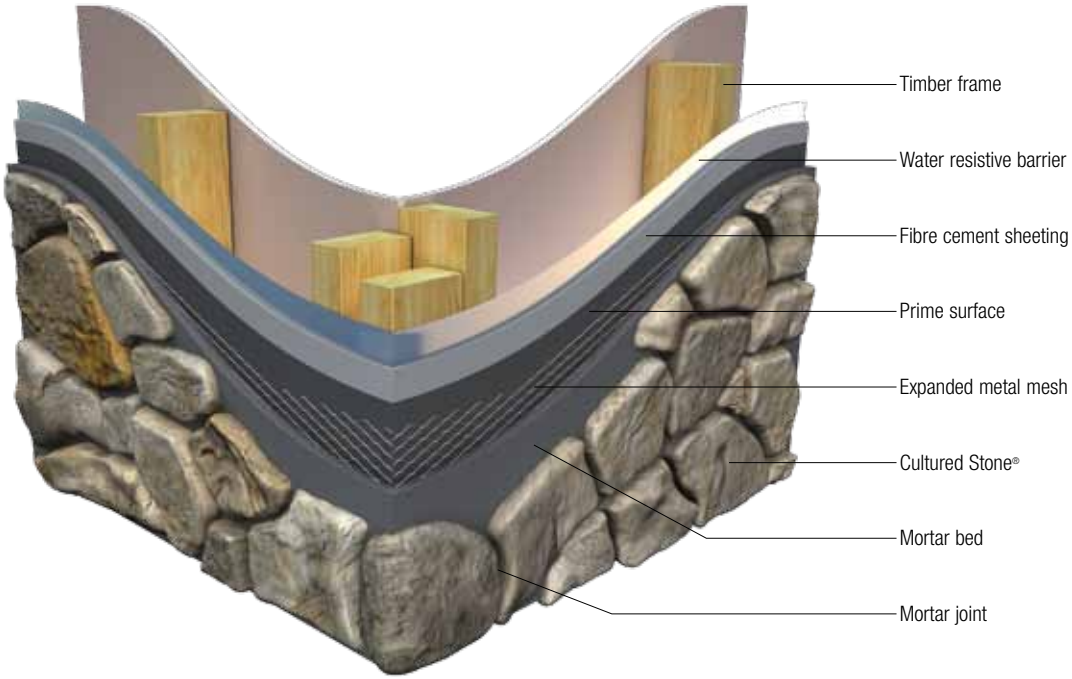


Figure 10: **Timber Frame - Fibre Cement Clad Typical Construction** (Dwg # CS-01.01)

Note: *Lightweight substrate applications should not exceed 9200mm in height.*

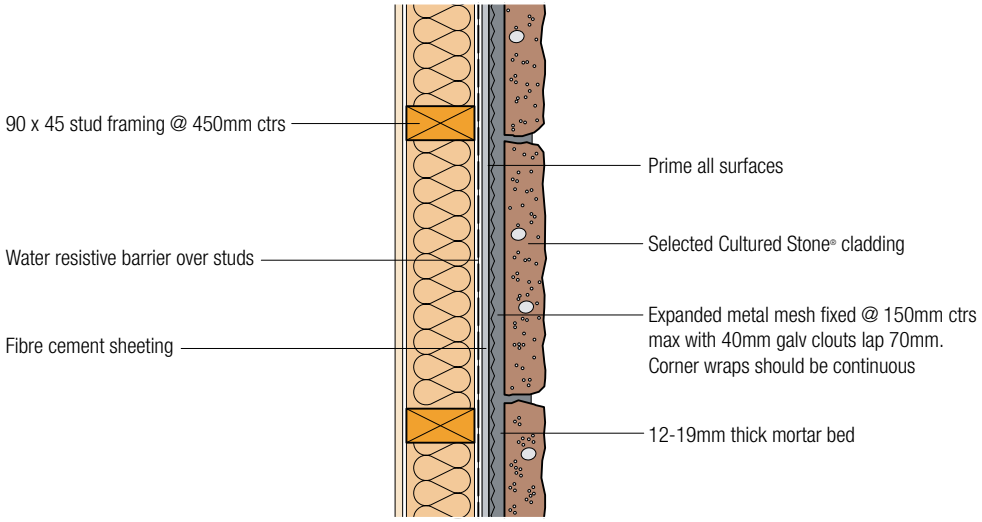


Figure 11: **Fibre Cement Clad - Plan** (Dwg # CS-03.01)

Lightweight Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

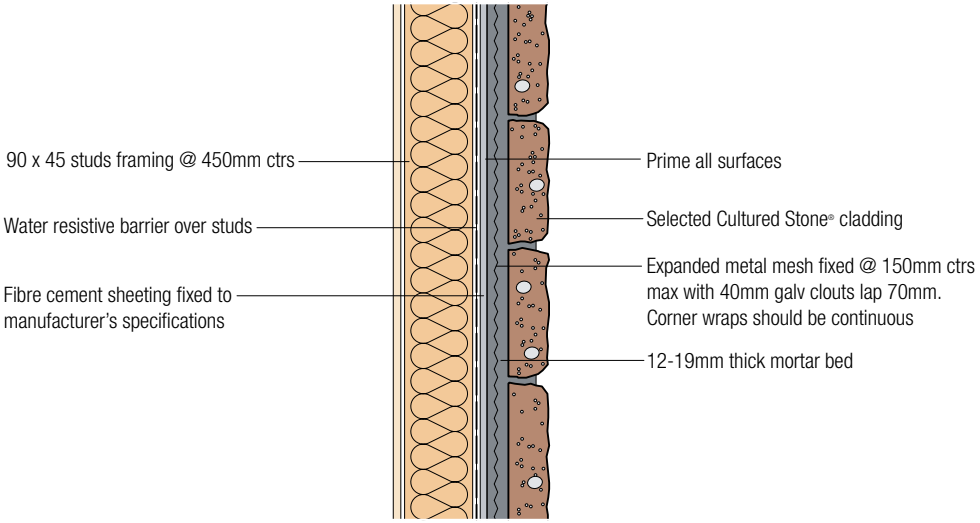


Figure 12: **Fibre Cement Clad - Section** (Dwg # CS-05.01)

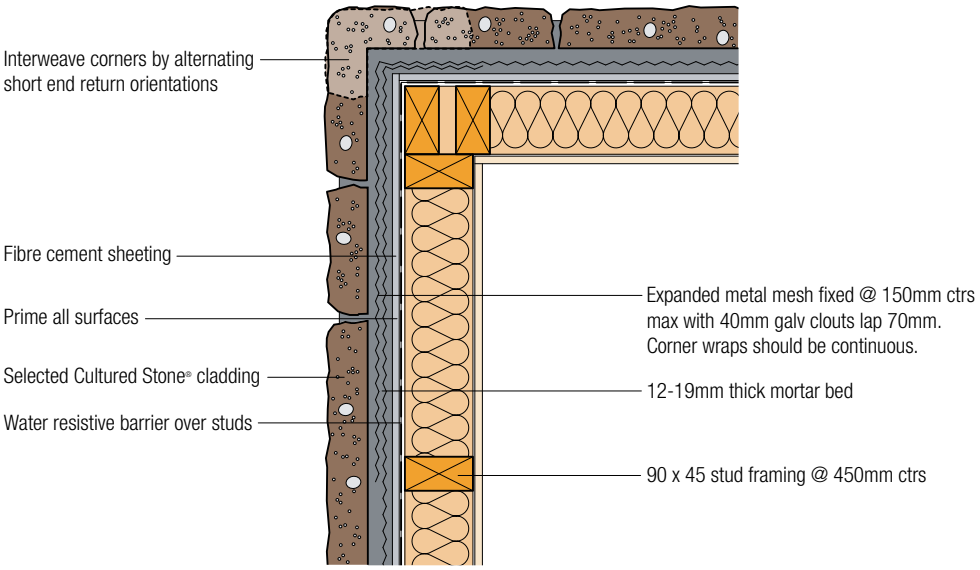


Figure 13: **Fibre Cement Clad Typical External Corner - Plan** (Dwg # CS-02.01)

Lightweight Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

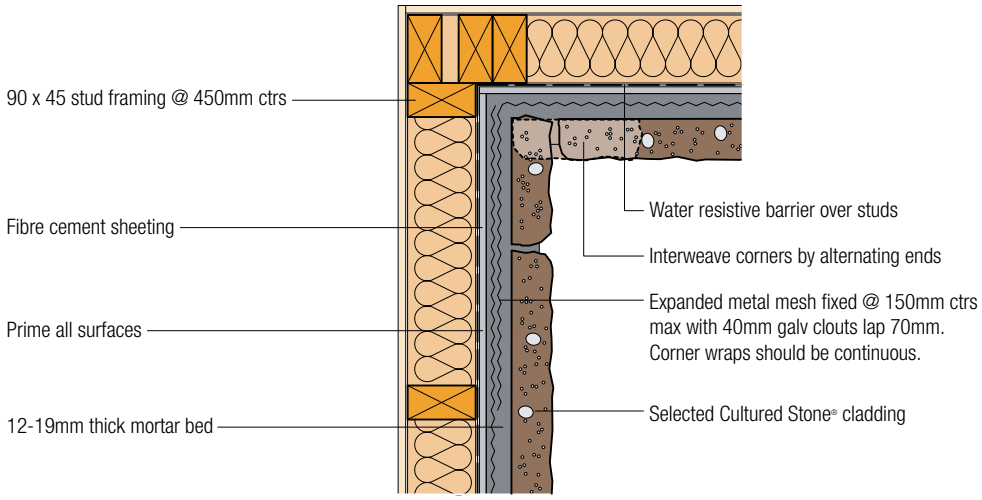


Figure 14: **Fibre Cement Clad Typical Internal Corner - Plan** (Dwg # CS-02.02)

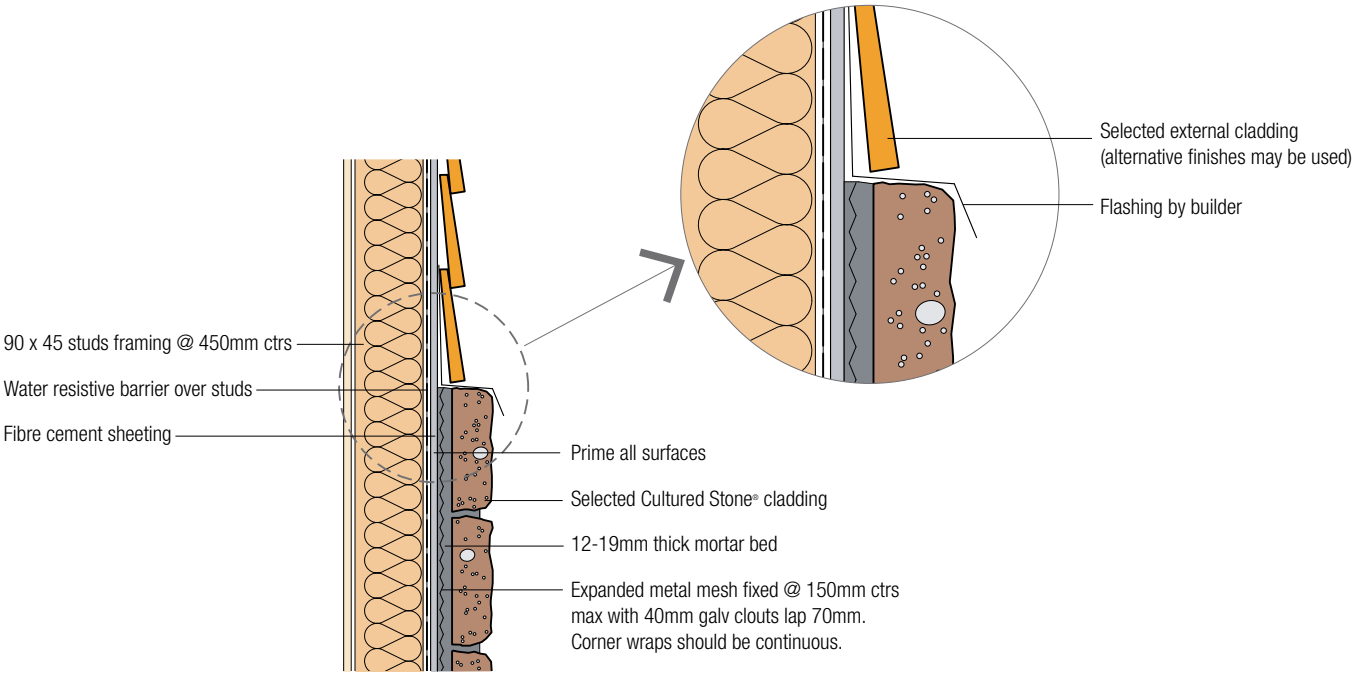


Figure 15: **Typical Cladding Transition - Section** (Dwg # CS-06.01)

» Design Details

Lightweight Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

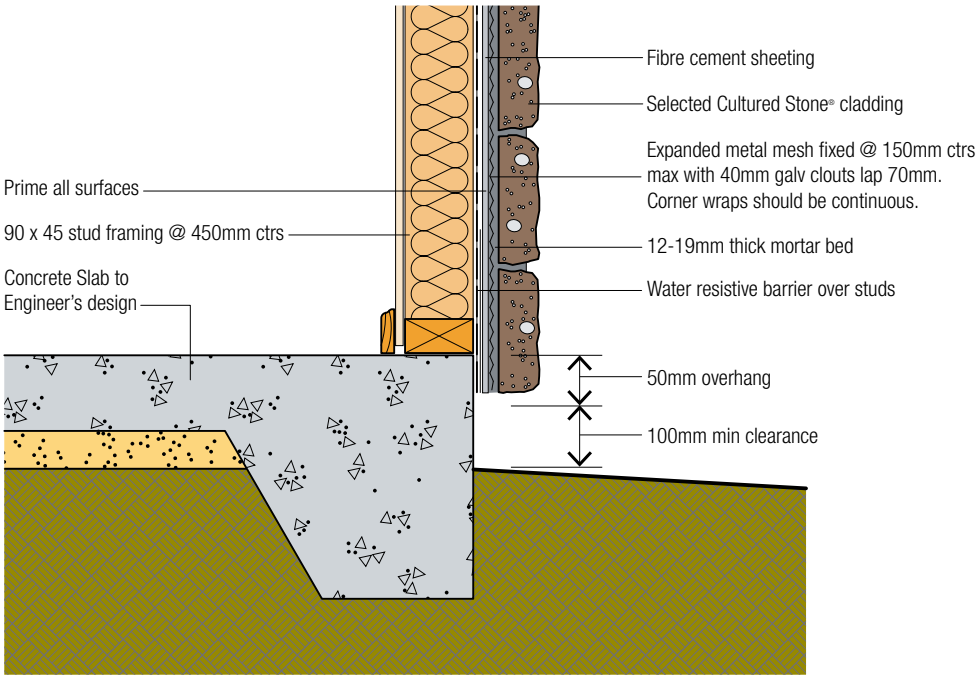


Figure 16: **Fibre Cement Clad Base - Section** (Dwg # CS-04.01)

Brick, Block and Concrete Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

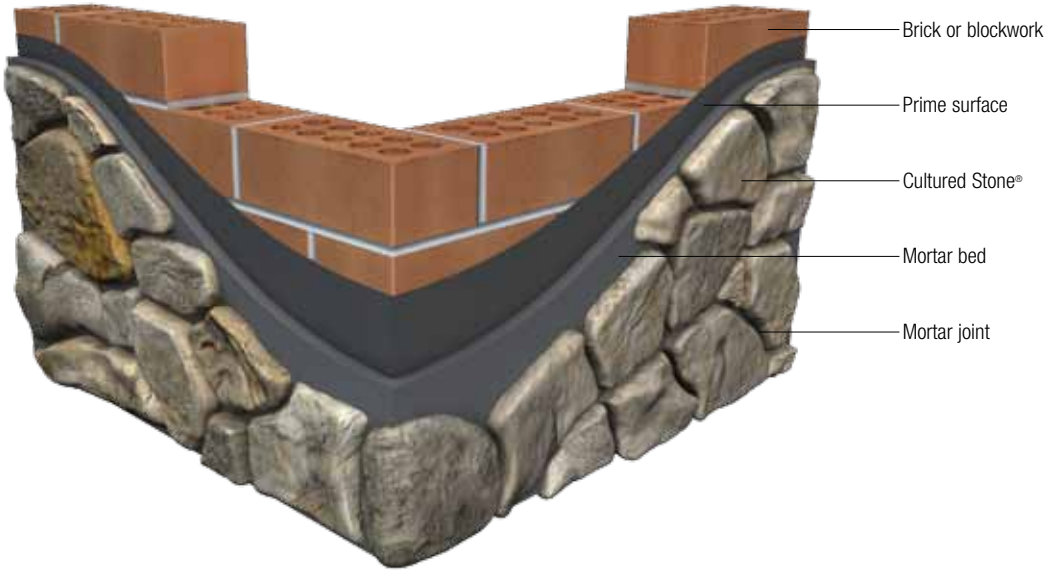


Figure 17: **Brick or Block Work Typical Construction** (Dwg # CS-01.02)

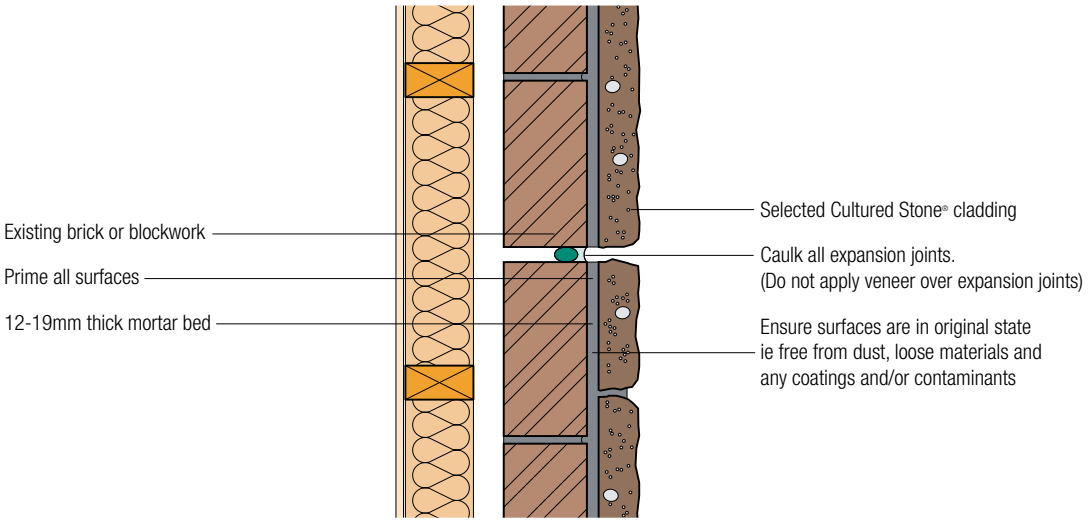


Figure 18: **Brick or Block Work Veneer - Plan** (Dwg # CS-03.02)

» Design Details

Brick, Block and Concrete Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

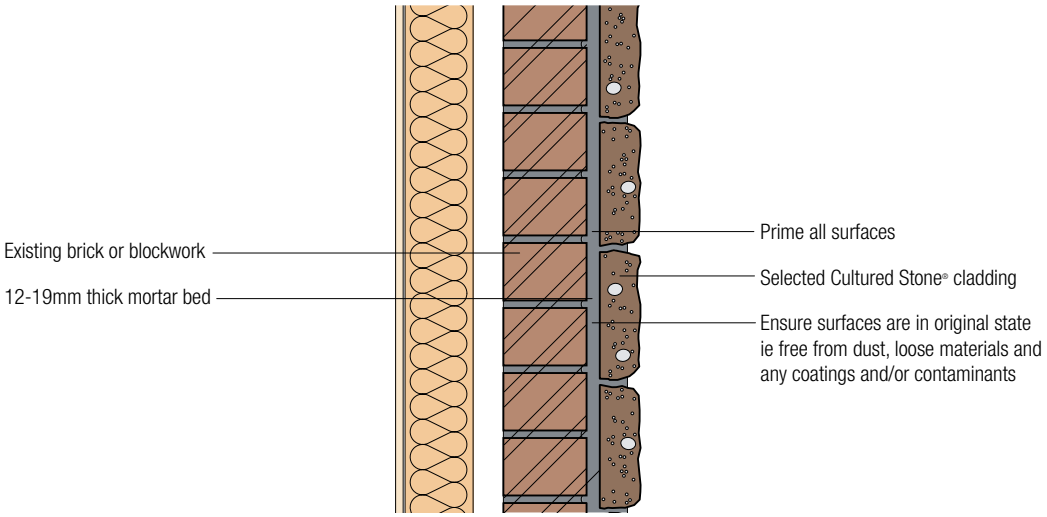


Figure 19: **Brick or Block Work Veneer - Section** (Dwg # CS-05.02)

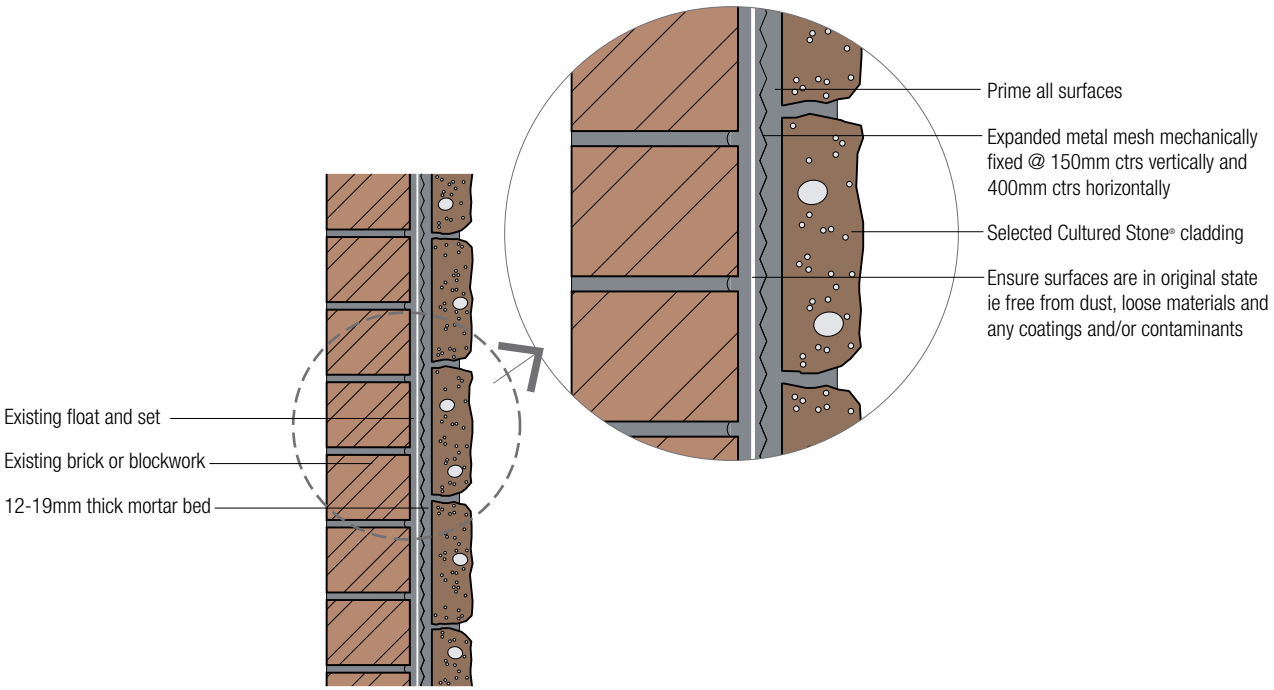


Figure 20: **Float and Set Internal Wall - Section** (Dwg # CS-05.03)

Brick, Block and Concrete Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

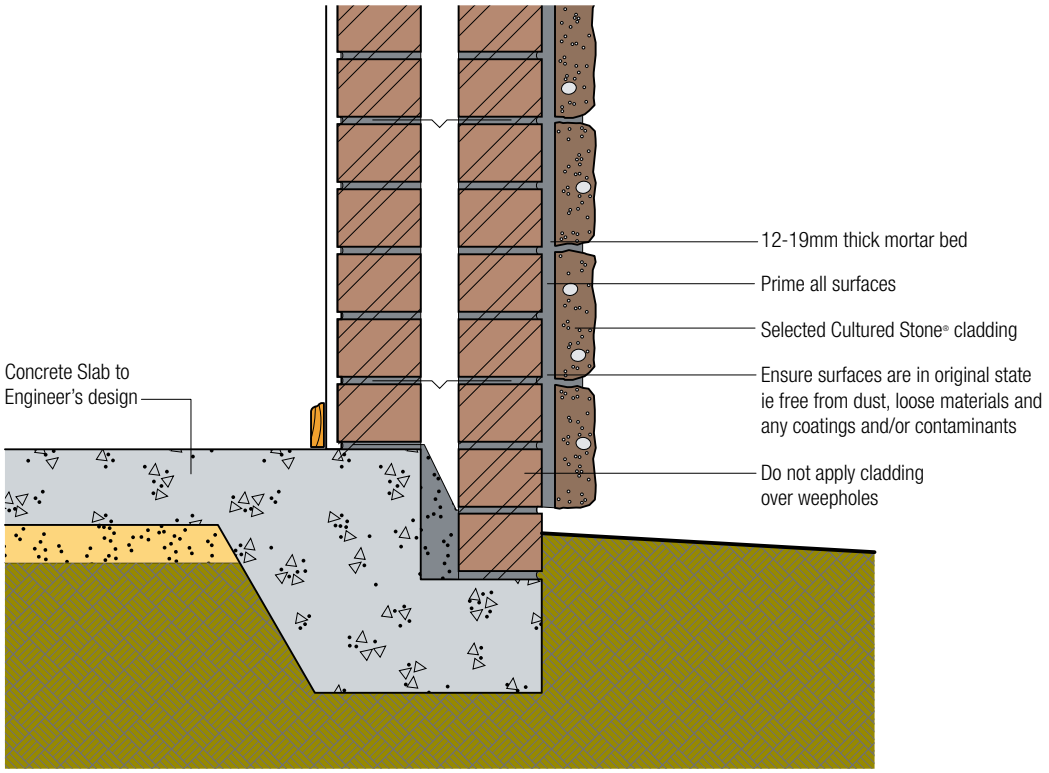


Figure 21: **Brick or Block Work Base - Section** (Dwg # CS-04.02)

Brick, Block and Concrete Substrates

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

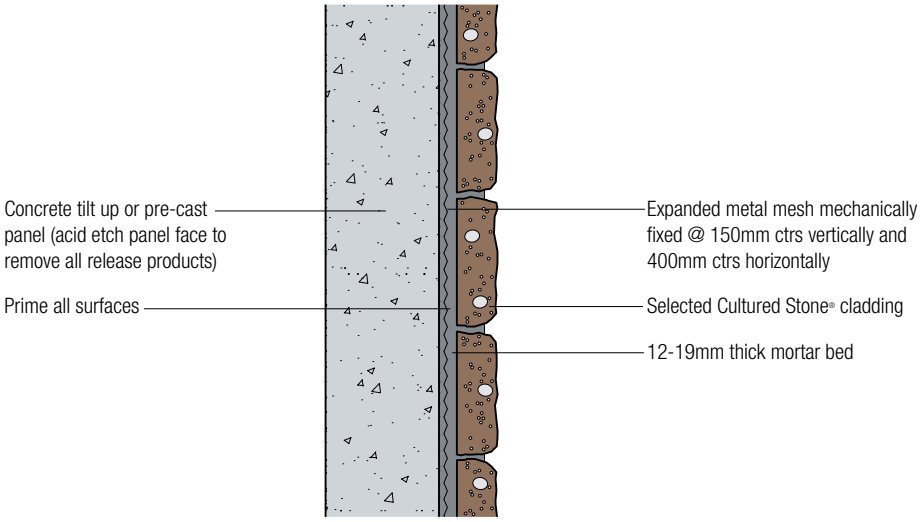


Figure 22: **Concrete Tilt Up or Precast Panel - Section** (Dwg # CS-05.04)

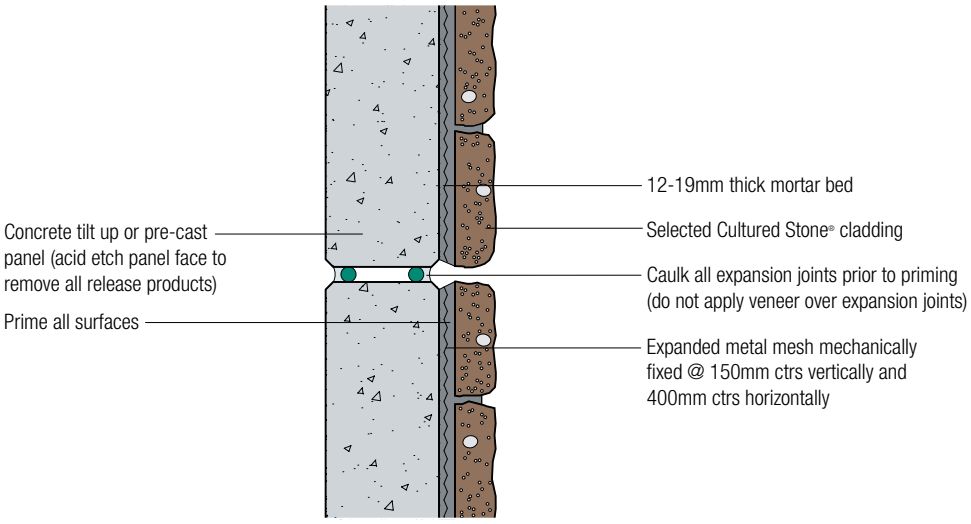


Figure 23: **Concrete Tilt Up or Precast Panel - Plan** (Dwg # CS-03.03)

Cladding Transitions and Window Junctions

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

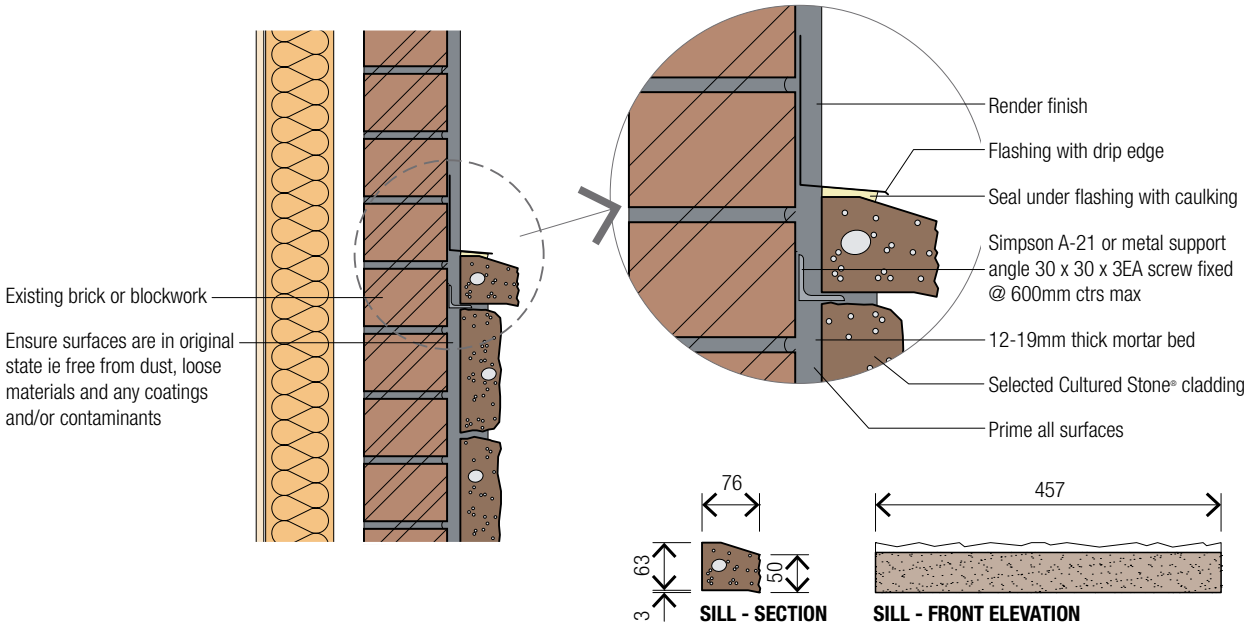


Figure 24: **Watertable Sill Render Transition - Section** (Dwg # CS-06.02)

Note: *Lightweight substrate applications should not exceed 9200mm in height. All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

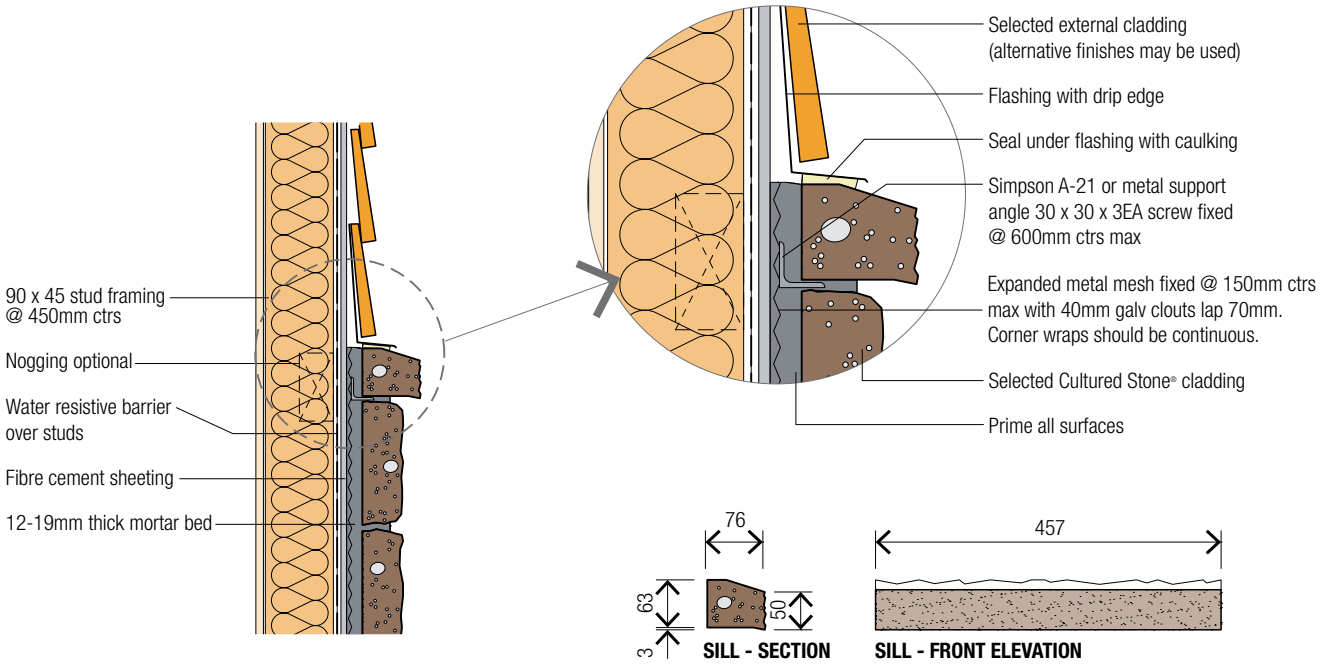


Figure 25: **Watertable Sill Cladding Transition - Section** (Dwg # CS-06.03)

Cladding Transitions and Window Junctions

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

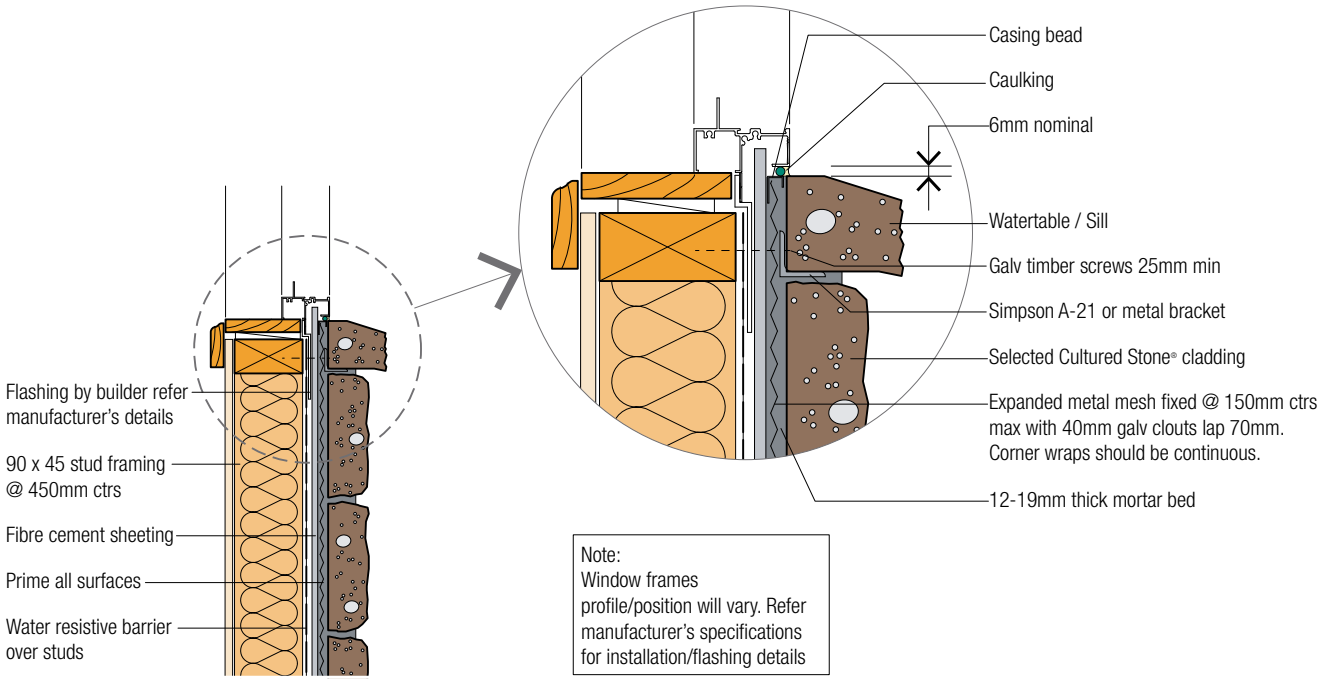


Figure 26: **Watertable Sill at Window - Section** (Dwg # CS-06.04)

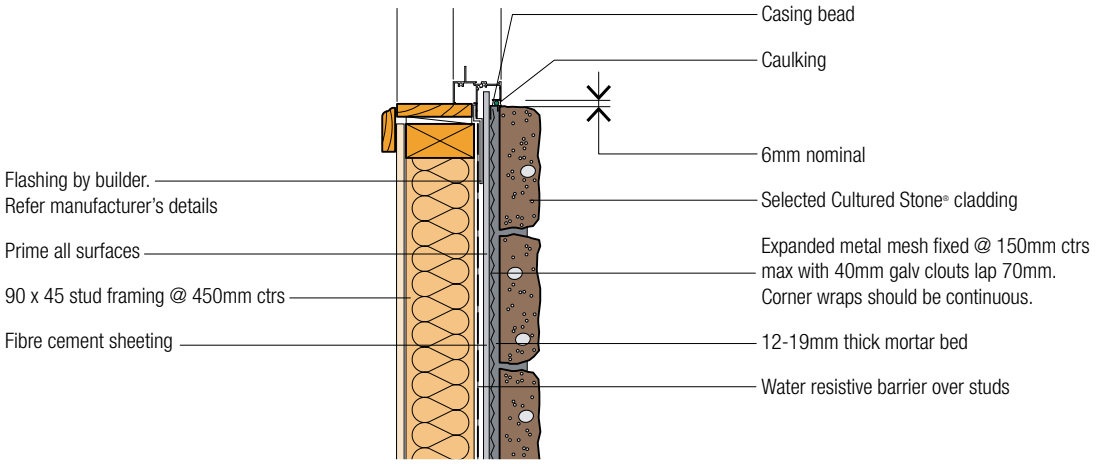


Figure 27: **Typical Window Sill - Section** (Dwg # CS-06.05)

Cladding Transitions and Window Junctions

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

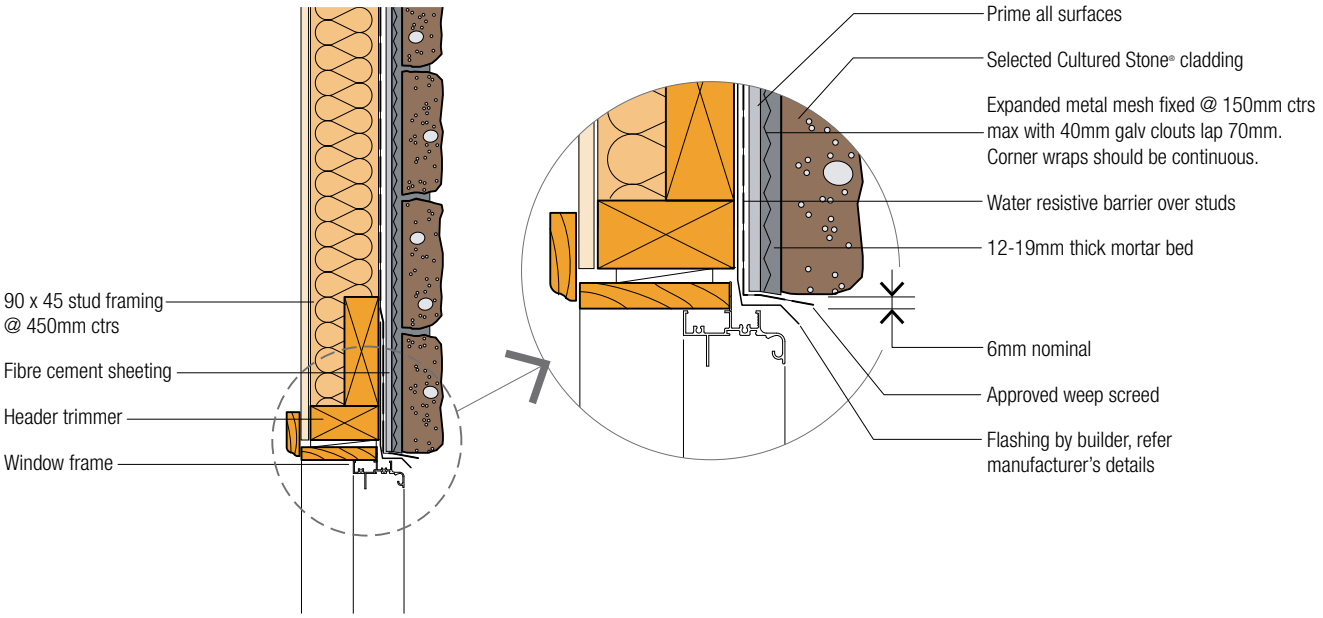


Figure 28: **Typical Window Head - Section** (Dwg # CS-07.01)

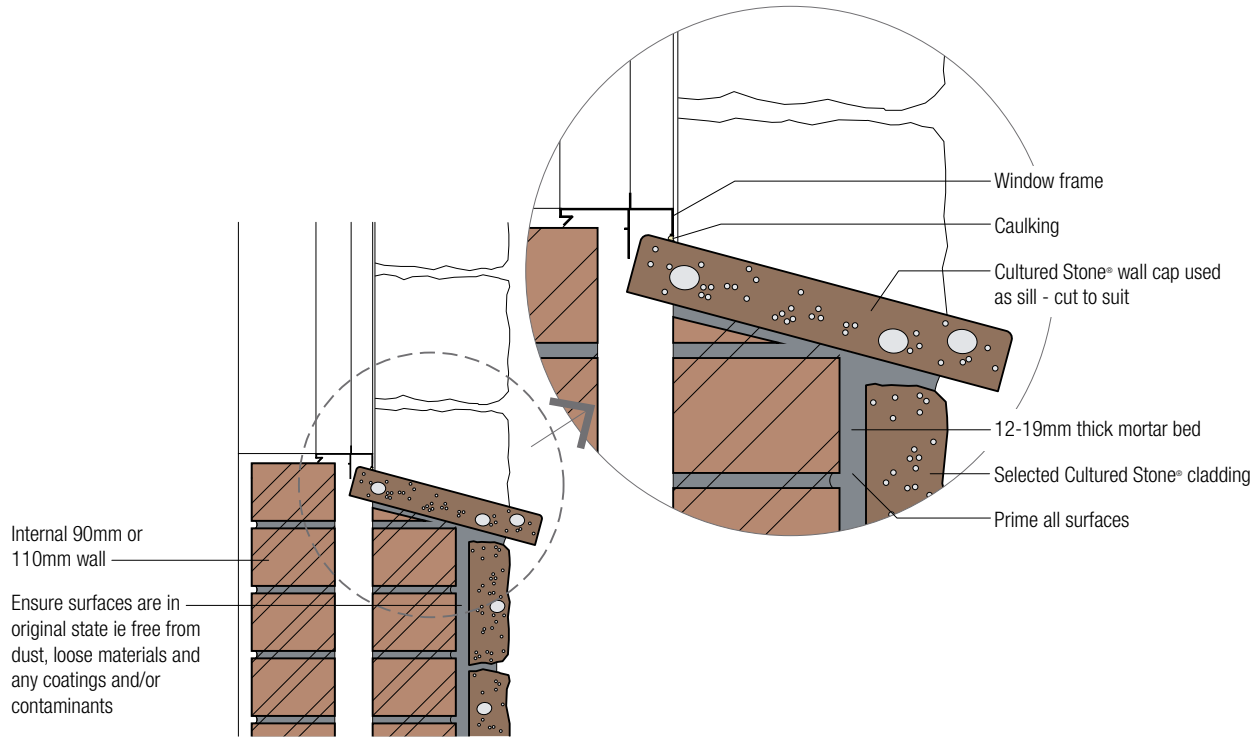


Figure 29: **Sill at Window - Section** (Dwg # CS-06.06)

Cladding Transitions and Window Junctions

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

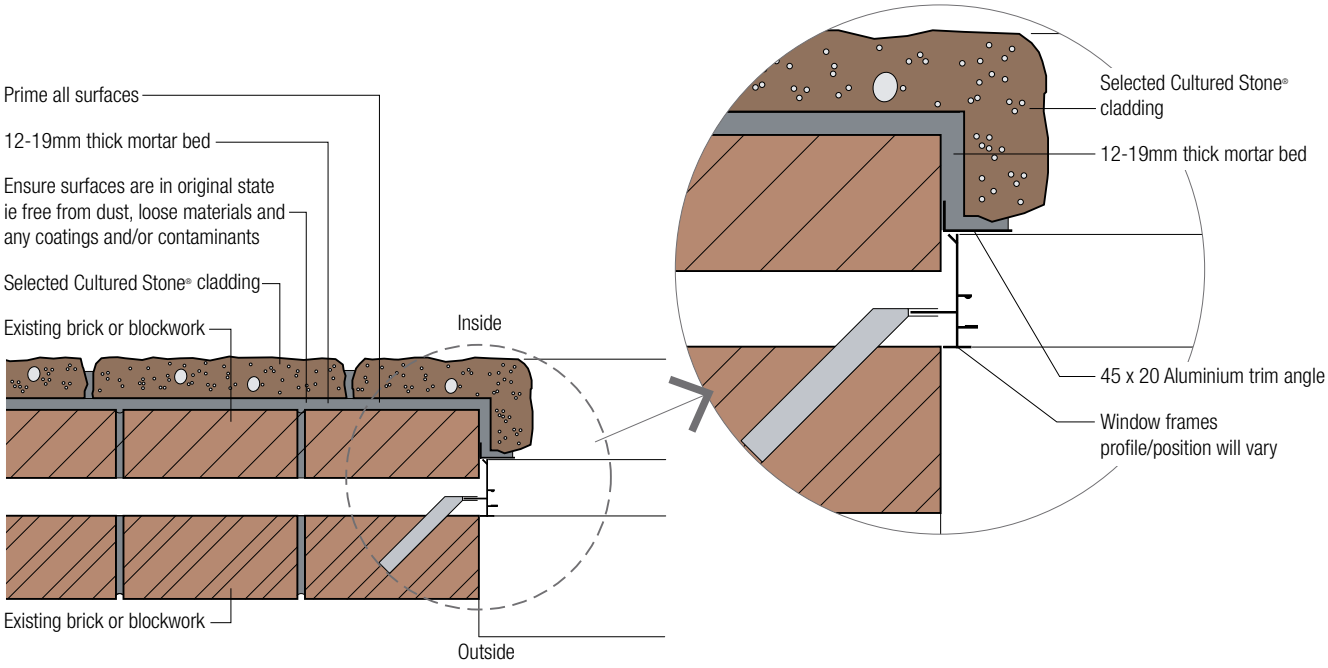


Figure 30: **Typical Internal Existing Application - Plan** (Dwg # CS-08.01)

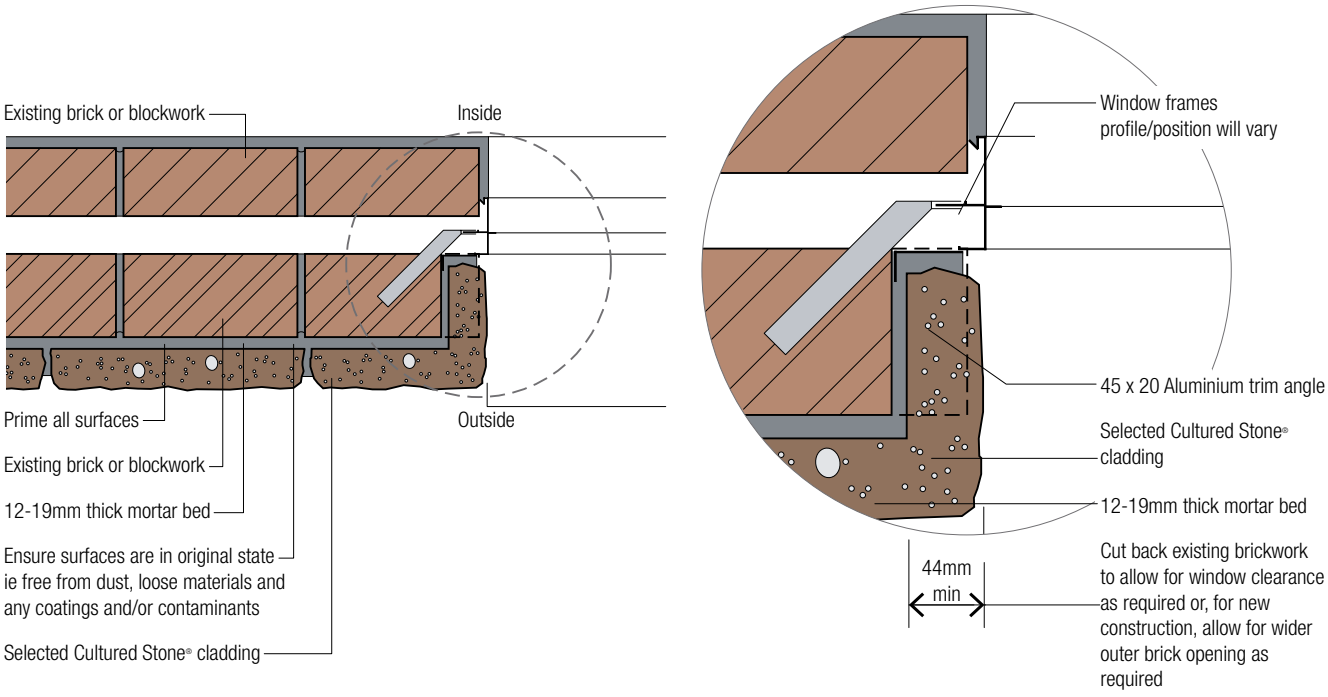


Figure 31: **Typical External Existing Application - Plan** (Dwg # CS-08.02)

Fascias and Eaves

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

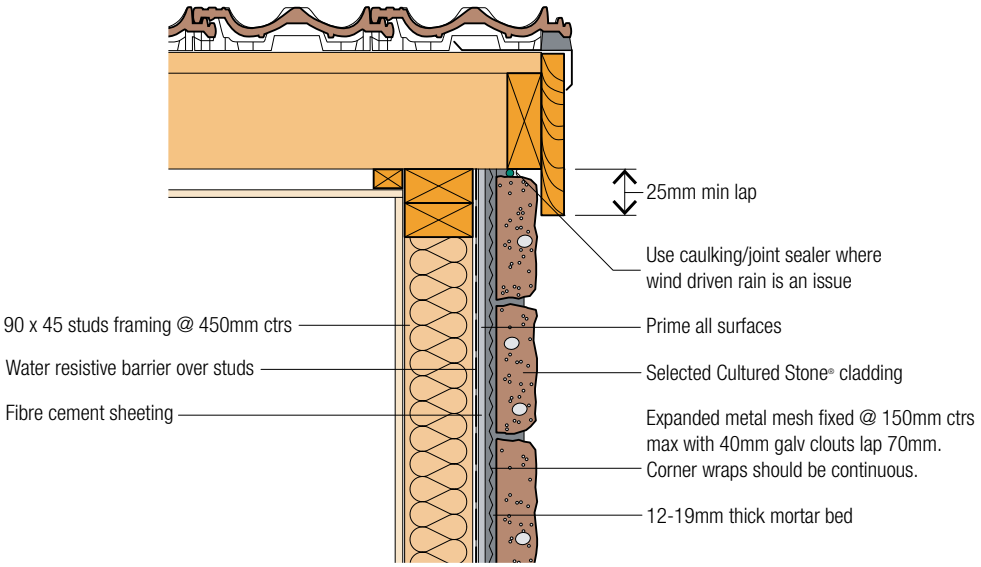


Figure 32: **Typical Raking Fascia - Section** (Dwg # CS-09.01)

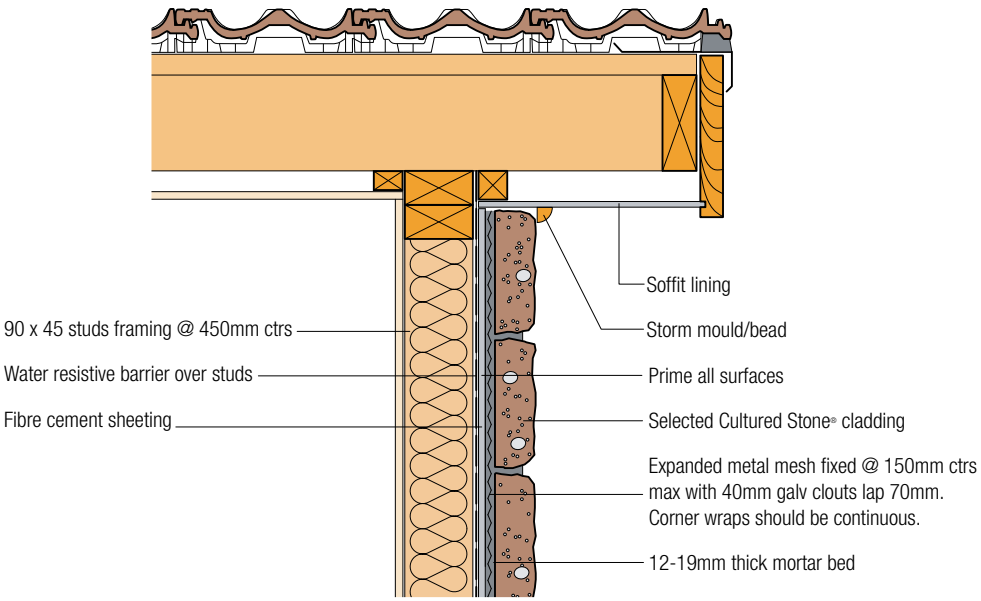


Figure 33: **Typical Raking Eave - Section** (Dwg # CS-09.02)

Fascias and Eaves

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

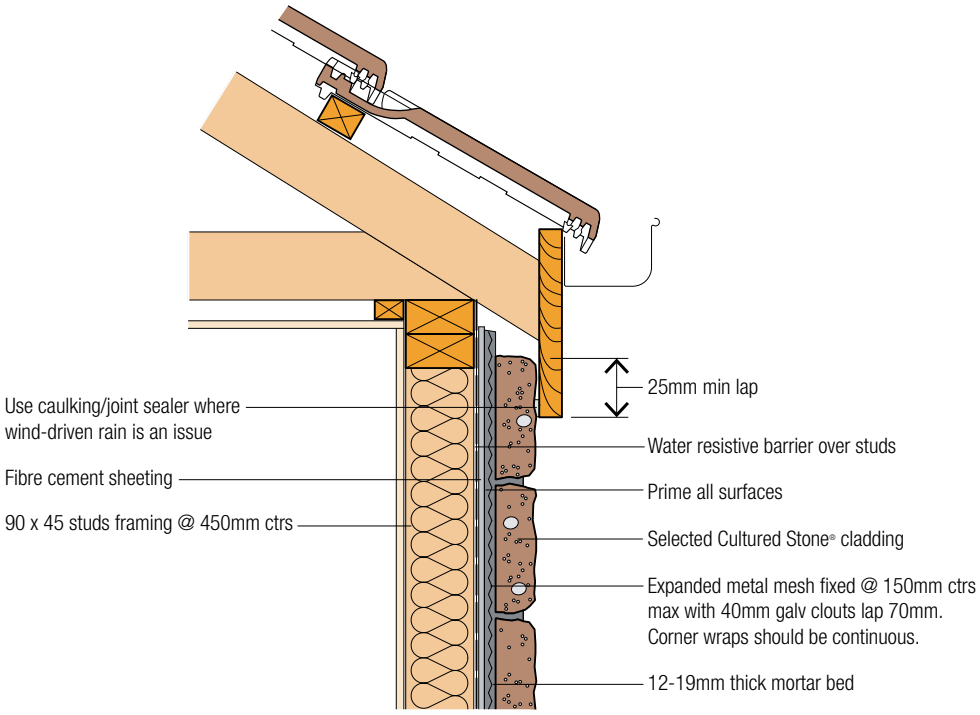


Figure 34: **Typical Flush Fascia - Section** (Dwg # CS-09.03)

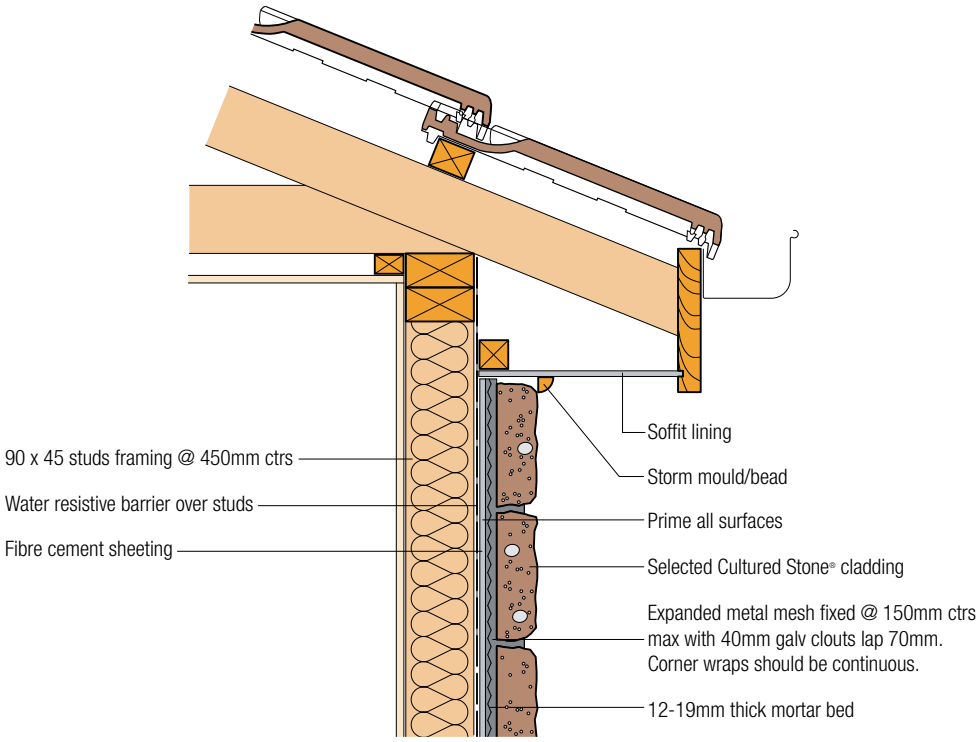


Figure 35: **Typical Eave - Section** (Dwg # CS-09.04)

» Design Details - Cappings

Cappings

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

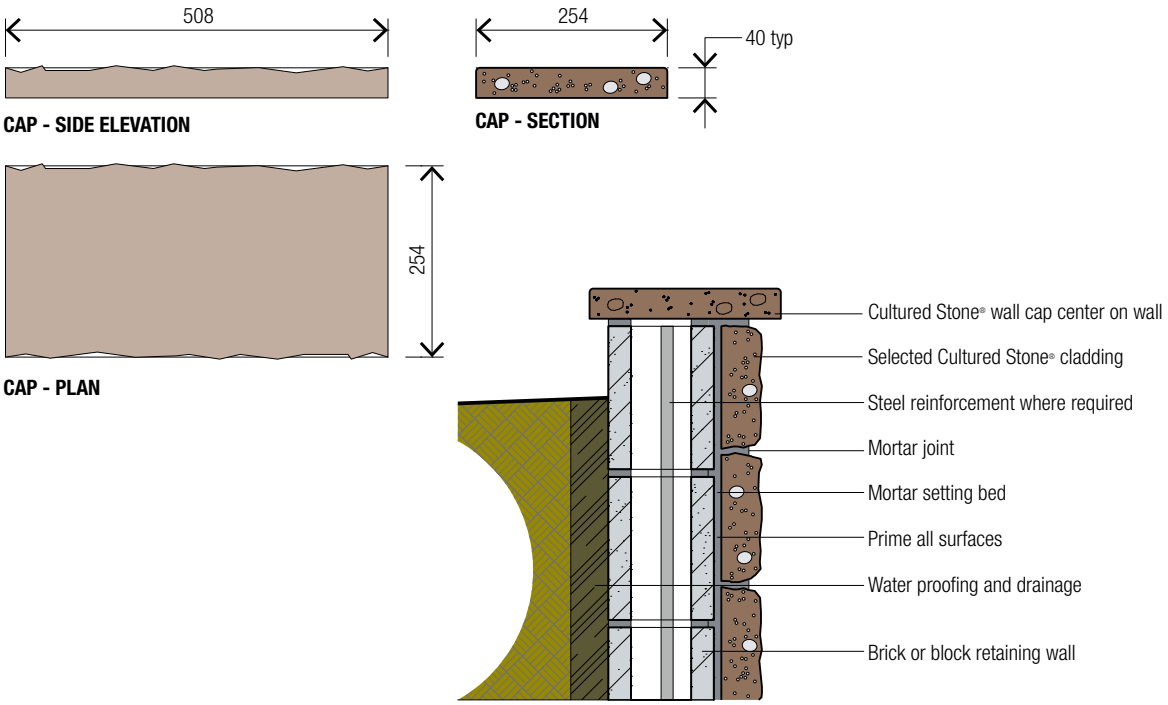


Figure 36: **Retaining Wall - Section** (Dwg # CS-10.01)

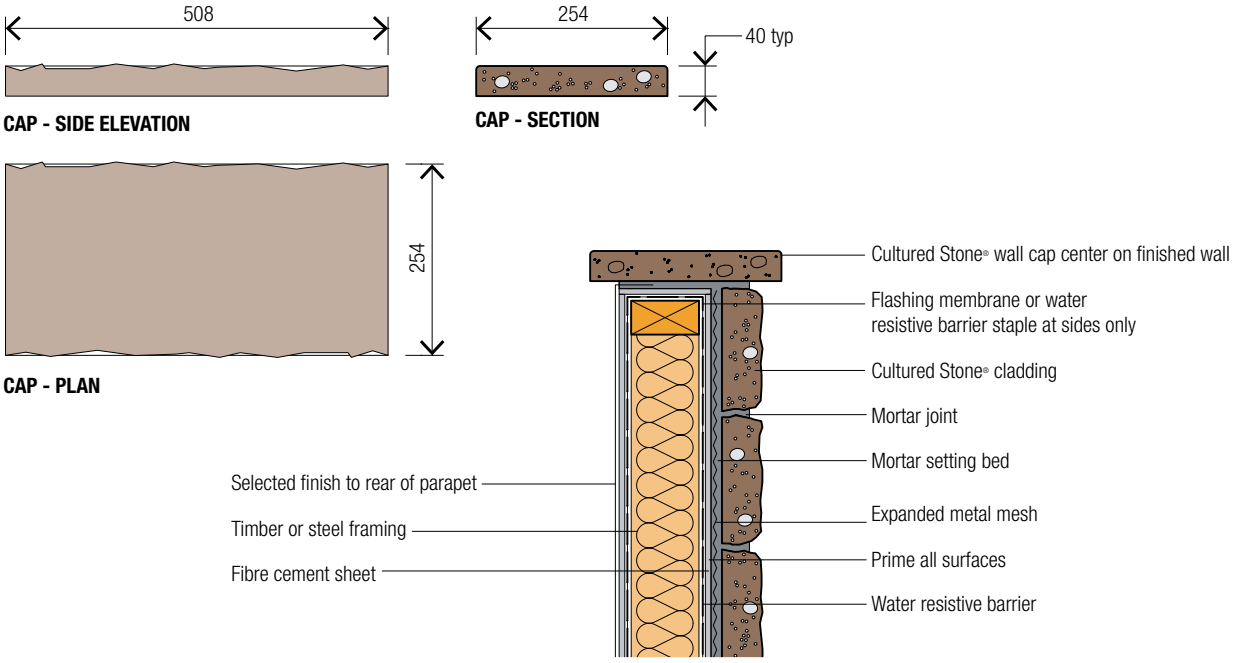


Figure 37: **Timber Frame Parapet - Section** (Dwg # CS-11.01)

Cappings

Note: *All drawings to be read in conjunction with Cultured Stone Technical Information Guide*

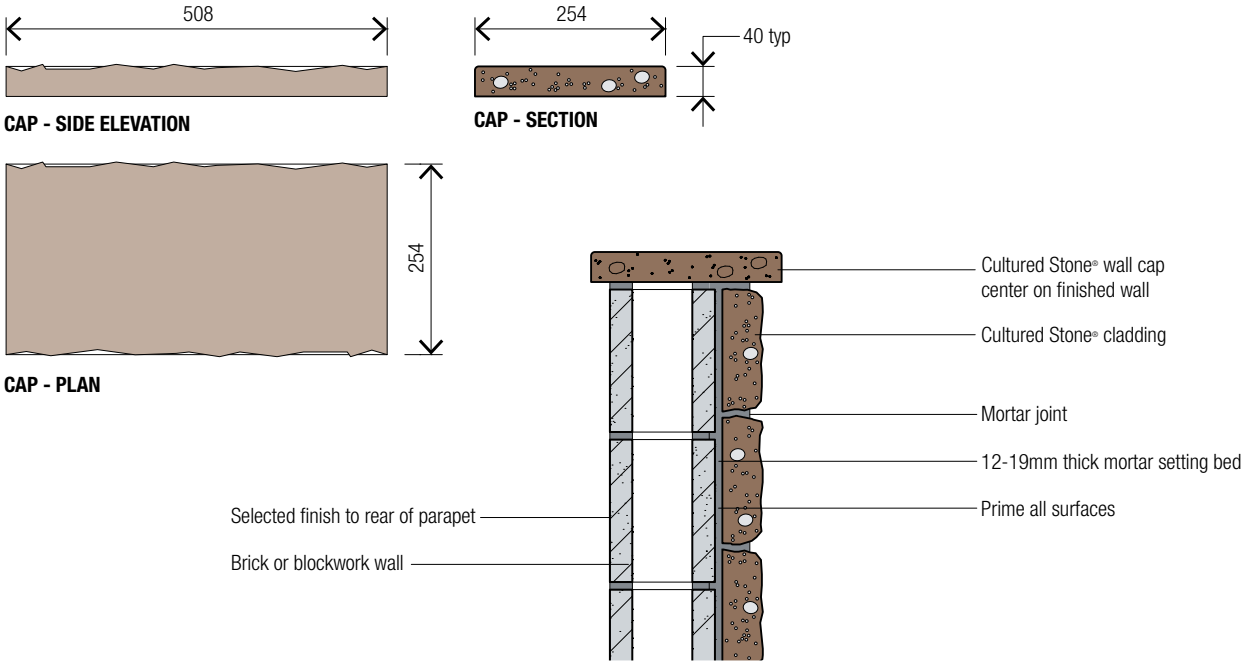


Figure 38: **Brick or Block Work Parapet - Section** (Dwg # CS-11.02)

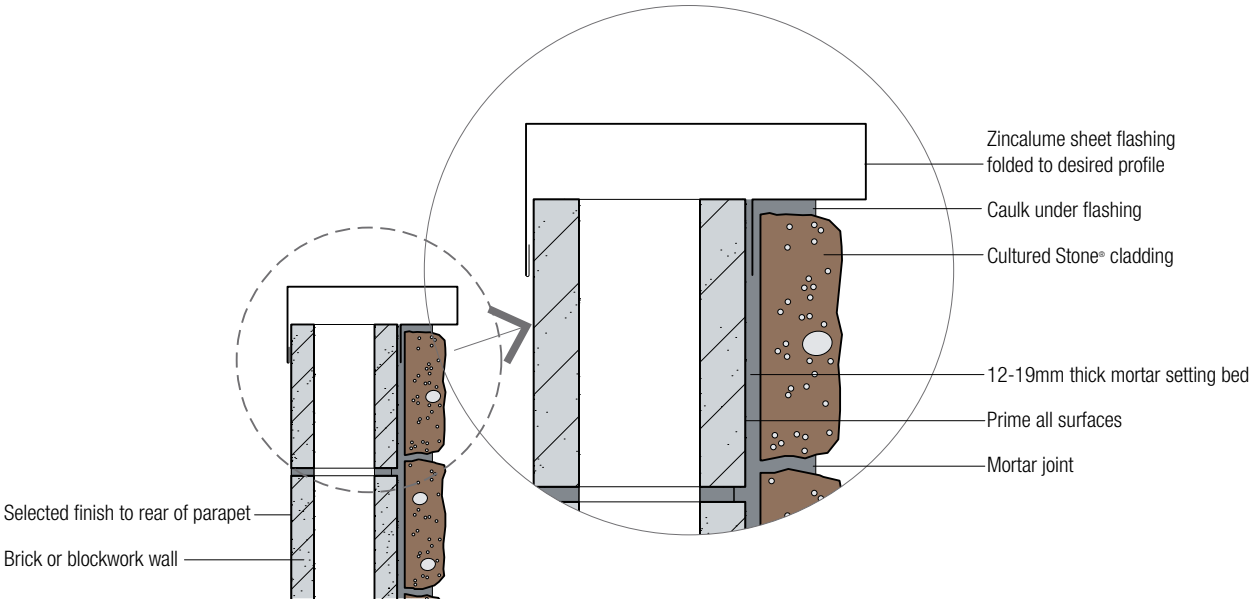


Figure 39: **Brick or Block Work Parapet Flashing Capping - Section** (Dwg # CS-11.03)

Material Safety Data Sheet (MSDS)

Material and Supplier Identification

Supplier Name: Boral Bricks Pty Ltd

Address: 235 Martin Road, Badgerys Creek NSW 2555

Telephone: 1300 360 255

Emergency: 1300 360 255

Web Site: http://www.boral.com.au/stone

Boral Products:
Cultured Stone®, Prostone and Versetta Stone

Synonym(s):

- Cultured Stone®
- Prostone
- Versetta Stone.

Use(s):

- Construction Material
- Quartz Surfacing Products.

SDS Date: 05 Sep 2011

Hazards Identification

Not classified as hazardous according to Safe Work Australia criteria.

Not classified as a dangerous good by the criteria of the ADG code.

UN No: None Allocated

DG Class: None Allocated

Subsidiary Risk(s): None Allocated

Packing Group: None Allocated

Hazchem Code: None Allocated

Composition/Information On Ingredients

Table 2: **Composition of Materials**

Ingredient	Formula	Cas No	Content
Quartz (Silica Crystalline)	Si-02	14808-60-7	0.1-1%
Pumice	Not Available	1332-09-8	40-70%
Glass, Oxide	Not Available	65997-17-3	1-5%
Iron Oxide	Fe2-03	Not Available	1-5%
Calcium Compound(S)	Not Available	Not Available	Not Available
Non Hazardous Ingredients	Not Available	Not Available	Remainder

First Aid Measures

Eye: If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation: Exposure is considered unlikely. Due to product form / nature of use, an inhalation hazard is not anticipated.

Skin: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion: For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). Due to product form and application, ingestion is considered unlikely.

Advice to Doctor: Treat symptomatically.

Fire Fighting Measures

Flammability: Non flammable.
May evolve toxic gases if strongly heated

Fire and Explosion: No fire or explosion hazard exists.

Extinguishing: Prevent contamination of drains or waterways.

Hazchem Code: None Allocated

Accidental Release Measures

Spillage: If spilt, collect and reuse where possible.

» Material Safety Data Sheet

Storage and Handling

Table 3: **Exposure Standards**

Ingredient	Reference	TWA	STEL
Iron oxide fume (Fe2O3) (as Fe)	SWA (AUS)	5 mg/m³	
Silica, Crystalline Quartz	SWA (AUS)	0.1 mg/m³	
Synthetic mineral fibres, respirable fibres	SWA (AUS)	0.5 f/ml	

Storage: Store in cool, dry, well ventilated area, removed from acids (eg hydrofluoric acid) and foodstuffs.

Handling: Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas. It is recommended that only wet sawing be used.

Exposure Controls/ Personal Protection

Biological Limits: No biological limit allocated.

Engineering Controls: Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Wet where possible. Maintain dust levels below the recommended exposure standard.

PPE: Wear cotton or leather gloves. If cutting or sanding with potential for dust generation, wear: dust-proof goggles and a Class P1 (Particulate) respirator.

Physical and Chemical Properties

Appearance:	Granular solid
Odour:	Odourless
Ph:	Not available
Vapour pressure:	Not available
Vapour density:	Not available
Boiling point:	Not available
Melting point:	Not available
Evaporation rate:	Not available
Autoignition temp:	Not available
Partition coefficient:	Not available
Solubility (water):	Insoluble
Specific gravity:	1.7
% Volatiles:	Not available
Flammability:	Non flammable
Flash point:	Not relevant
Upper explosion limit:	Not relevant
Lower explosion limit:	Not relevant
Decomposition temp:	Not available
Viscosity:	Not available

Stability and Reactivity

Chemical Stability:
Stable under recommended conditions of storage.

Conditions to Avoid:
Avoid heat, sparks, open flames and other ignition sources.

Material to Avoid:
Incompatible with strong acids (eg hydrofluoric acid).

Hazardous Decomposition Products:
May evolve toxic gases if heated to decomposition.

Hazardous Reactions:
Polymerization is not expected to occur.

» Material Safety Data Sheet

Toxicological Information

Health Hazard Summary: Low toxicity. Adverse health effects, usually associated with long term exposure to high crystalline silica dust levels are not anticipated due to product form. This product may only present a hazard if bricks are cut, sanded or drilled with dust generation. Use safe work practices to avoid dust generation - inhalation. Chronic exposure may result in lung fibrosis (silicosis).

Position of Boral: Current research is equivocal as to the carcinogenicity of Crystalline Silica. Whilst Crystalline Silica inhaled in the form of quartz or cristobalite from occupational sources, has been classified by the IARC as carcinogenic to humans (Group 1), it is not so classified by a number of other regulatory bodies in Australia and the USA.

Eye: Due to product form and nature of use, the potential for exposure is reduced. Product may only present a hazard if bricks are cut, drilled or sanded with dust generation, which may result in mechanical irritation.

Inhalation: Exposure considered unlikely. An inhalation hazard is not anticipated unless cut, drilled or sanded with dust generation, which may result in irritation of the nose and throat.

Skin: Low irritant. Prolonged or repeated contact may result in mild irritation due to mechanical action.

Ingestion: Ingestion is considered unlikely due to product form.

Toxicity Data:

QUARTZ (SILICA CRYSTALLINE) (14808-60-7)

LCLo (Inhalation): 300 ug/m³/10 years (human)
LDLo (Intratracheal): 200 mg/kg (rat)
LDLo (Intravenous): 20 mg/kg (dog)
TCLo (Inhalation): 16,000,000 particles/ft³/8 hours/17.9 years (human-fibrosis)

GLASS, OXIDE (65997-17-3)

TCLo (Inhalation): 5 mg/m³/7H/90W (rat)
TDLo (Intraperitoneal): 50 mg/kg (rat)

Ecological Information

Environment: The main component/s of this product are not anticipated to cause any adverse effects to plants or animals.

Disposal Considerations

Waste Disposal: Reuse where possible. No special precautions are required for this product.

Legislation: Dispose of in accordance with relevant local legislation.

Transport Information

Not classified as a dangerous good by the criteria of the ADG code

Shipping name:	None allocated
UN No:	None allocated
Packing group:	None allocated
DG class:	None allocated
Hazchem code:	None allocated
Subsidiary risk(s):	None allocated

Regulatory Information

Poison Schedule: A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

AICS: All chemicals listed on the Australian Inventory of Chemical Substances (AICS).

» Material Safety Data Sheet

Other Information

Abbreviations:

ACGIH	American Conference of Industrial Hygienists
ADG	Australian Dangerous Goods
BEI	Biological Exposure Indice(s)
CAS#	Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS	Central Nervous System
EC No	European Community Number
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
mg/m³	Milligrams per Cubic Metre
NOS	Not Otherwise Specified
pH	Relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline)
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances
STEL	Short Term Exposure Limit
SWA	Safe Work Australia
TWA	Time Weighted Average.

Health Effects From Exposure:

It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Personal Protective Equipment Guidelines:

The recommendation for protective equipment contained within this ChemAlert report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Report Status:

This document has been compiled by RMT on behalf of the manufacturer of the product and serves as the manufacturer's Safety Data Sheet ('SDS').It is based on information concerning the product which has been provided to RMT by the manufacturer or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any Warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss,injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

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SDS Date: 05 Sep 2011
End of Report

Test Results

Currently, there are no Australian Standard for manufactured stone cladding, therefore Boral is relying on testing to ICC Evaluation Service Acceptance Criteria 51 for Precast Stone Veneer. Tests have been conducted in accordance with ASTM International, formerly known as the American Society for Testing and Materials (ASTM). Refer to www.iccsafe.org and www.astm.org for more information.

Cultured Stone® cladding is engineered to meet or exceed specifications for major code approvals in the United States of America (USA). Complete copies of these Cultured Stone® USA building code evaluation reports, research reports, approvals and listings are available upon request. Results of tests conducted by independent testing agencies in the USA confirm that the Cultured Stone® cladding conforms to or exceeds the following test requirements as specified in the USA ICC Evaluation Service Acceptance Criteria 51 for Precast Stone Veneer:

Note:
Always check with local Australian building codes prior to installation.

Table 4: **Test Results**

Materials			
Cement	May 17, 2006	Tested in the USA to ASTM C 150 or ACI 318 Section 3.2.1	
Sand	May 17, 2006	Tested in the USA to ASTM C 144 or C 33	
Aggregate	May 17, 2006	Tested in the USA to ASTM C 33 or C 330 (except gradation), C 331	
Testing			
Shear Bond Test (adhesion)	May 17, 2006	Tested in the USA in accordance with ASTM C 482	>345 kPa
Water Absorption	May 17, 2006	Tested in the USA in accordance with UBC 15-5	9%–22% depending on texture
Freeze/Thaw Characteristics	May 17, 2006	Testing procedures in the USA follow those outlined in ASTM C 67	<3% mass loss
Compressive Strength	May 17, 2006	Tested in the USA in accordance with ASTM C 39	>12.4 MPa @ 28 days
Unit Weight	May 17, 2006	Density is determined in accordance with USA code ASTM C 567	<73 kg/m^2
Tensile Strength	May 17, 2006	Tested in the USA in accordance with ASTM C 190	Reported
Flexural Strength	May 17, 2006	Tested in the USA in accordance with ASTM C 348	Reported
Thermal Properties	May 17, 2006	Tested in the USA in accordance with ASTM C 177-71	R-value is .620 based on a 45mm thick sample. Average thickness may vary on different Cultured Stone® cladding products, and the R-value will vary accordingly.
Noncombustible	Dec 8, 2008	Tested in the USA and listed by Underwriters Laboratories, Inc.	Cultured Stone® brand products showed zero flame spread and zero smoke development.

Caution

General Notes to Installer

Cultured Stone® contains Crystalline Silica. Dusts of this product may cause irritation of the nose, throat and respiratory tract. Avoid prolonged or repeated inhalation of dusts from this product. An appropriate dust mask should be selected and used in compliance with AS1715 and AS1716 when mechanically altering this product (eg, sawing, cutting, drilling or similar dust generating processes). Wear long-sleeved shirt, long pants, gloves and safety glasses with side shields when handling and installing material. Wash hands and face with soap and warm water immediately after handling this product.

Timber frame and steel frame applications should not exceed 9200mm in height.

When estimating quantities of Boral Cemstik required, allow 1 Litre per 1 square metre of wall area.

Accidental smears or mortar droppings should be removed using a whisk broom or stiff bristled nylon brush.

A wet brush or sponge should never be used.

When cleaning Cultured Stone® cladding, do not use acid or acid-based products, power-washing, sandblasting or wire brush cleaning.

When Cultured Stone® cladding is installed correctly, fibre cement sheet, expanded metal mesh or brickwork will not be visible.

Refer to Cultured Stone® installation video for visual guidance on application (www.boral.com.au/stone).

Specification

Go to www.boral.com.au/stone for the Word version of the Specification document.

Manufactured Masonry

General Notes To Specifier:

This specification section has been prepared to assist design professionals in the preparation of project or office master specifications and may be used with most master specification systems with minor editing.

Edit carefully to suit project requirements. Modify as necessary and delete items that are not applicable. Verify that referenced section numbers and titles are correct.

Disclaimer

Boral accepts no liability for the use of the contents of this specification. The circumstances of each individual project can dictate the use of specific construction techniques or materials. We recommend the information in this specification is viewed as a guide only. Additional information may be required to address specific project requirements.

This is a closed proprietary specification.

Notes to the specifier are contained in boxes and should be deleted from final copy.

Optional items requiring selection by the specifier are enclosed within brackets, eg [35] [40] [45].
Make appropriate selections and delete others.

Items requiring additional information are underlined blank spaces, eg _____.

Bold face type identifies optional paragraphs and features that may be included or deleted depending on project requirements. Convert the bold face type to regular type when including these paragraphs or features. When deleting a paragraph, be certain that all subparagraphs are also deleted.

Revise footer to suit project/office requirements.

Electronic versions of this specification utilize automatic paragraph numbering.

When editing is complete, delete all text on this page, then remove the section break at the top of the next page to remove this page from the document.

Specification begins on the following page.

» Specification

Manufactured Stone Cladding

Part 1 - General

1.01 Related Documents

A Read this section in conjunction with other related sections such as General Provisions and Preliminaries.

B Boral accepts no liability for the use of the contents of this specification. The circumstances of each individual project can dictate the use of specific construction techniques or materials. We recommend the information in this specification is viewed as a guide only. Additional information may be required to address specific project requirements.

1.02 Type of Specification Section

A This section is a Closed Proprietary Specification.

1.03 This section of the Specification and the [Contract] [Architectural] Drawings state requirements for:

A Manufactured stone cladding

B Application materials

If following paragraph is retained, insert special conditions desired to be reviewed in the blank space.

1.04 Sample/Benchmark

A Provide in a location accepted by [Architect] [Superintendent] showing representative sample of installed product including penetration and termination details, corner detail, _____, mortar colour and tooling.

B Minimum Size: 1000mm x 1000mm [_____ by _____ mm].

C Obtain acceptance from [Architect] [Superintendent] before commencing construction of Work under the Contract.

D Accepted field sample may remain as part of completed Work.

1.05 Working Drawings

A Provide working drawings showing all Work details.

1.06 Delivery, Storage and Handling

A Follow manufacturer's written instructions.

1.07 Project/Site Conditions

A Maintain materials and ambient temperature in area of installation at minimum 4 degrees Celsius prior to, during, and for 48 hours following installation.

» Specification

1.08 Warranty

A Provide manufacturer's standard limited warranty against defects in manufacturing for a period of 50 years following date of [Substantial Completion] [Final Acceptance].

1.9 Maintenance

A In location accepted by [Architect] [Superintendent], provide manufactured stone in a variety of shapes and sizes in quantity equal to three percent of the installed stone. Packaging shall be accepted by [Architect] [Superintendent].

Part 2 - Products

2.01 Manufacturer

A Boral Bricks Pty Ltd Address: 251 Salmon Street, Port Melbourne, VIC, AUSTRALIA, 3207
Tel: (03) 9981 2800 Fax: (03) 9214 2192 Website: www.boral.com.au/stone

Insert name, address and phone numbers of local distributor below.

B Manufacturer's Distributor:

C Substitutions: None permitted.

2.02 Manufactured Stone Cladding Materials

Select products from A and B below as required for the project. Delete those not used.

A Cultured Stone Textures:

Select either single texture or blended texture colour below. For single texture designate texture name and colour.
For blended textures, designate colour percentage (of each texture), texture name and colour; for example:
- *80 Percent Country Ledgestone, Aspen.*
- *20 Percent Dressed Fieldstone, Chardonnay.*

Select textures and colours from current Cultured Stone® product resources (www.boral.com.au/stone).

1 Single Texture Colour: _____, _____

2 Blended Texture Colour:

_____ Percent _____, _____.

_____ Percent _____, _____.

Designate trim colours/textures below from current Cultured Stone® product resources: www.boral.com.au/stone.
Click on appropriate trim type.

» Specification

B Architectural Trim:

1 Wall Capstones:

- Texture: [Flat].
- Colour: [_____]
- Size: 254 x 510 mm (10 by 20 inches) Dimensions are nominal.

2 Watertable/Sill—Stone Textured:

- Colour: [_____] [As shown on Drawings].
- Size: 50mm (front), 65mm (back) by 75mm by 455 mm.
- Provide sloped top surface and drip edge.

2.03 Related Materials

Edit following materials based on local usage and building code requirements. Delete materials specified in separate sections.

A Water Resistive Barrier:
Manufactured in accordance with AS4200-1 Pliable Building Membranes and Underlays – Materials

B Metal Lath: 1.4 kg/m^2 galvanized expanded metal lath

C Fasteners:

- Into Timber Studs:
  40mm galvanised clouts or screws. Minimum length to penetrate 25mm minimum into the timber stud.
- Into Metal Studs:
  Minimum 11.1mm head diameter, corrosion-resistant , self-drilling, self tapping, pancake head screws of sufficient length to penetrate 10mm minimum into the stud.

D Mortar: Mixed following manufactured masonry manufacturer's installation instructions.

Mortar Colour: Iron oxide pigments.

» Specification

Part 3 - Execution

3.01 Examination

A Examine substrates upon which manufactured stone cladding will be installed.

B Coordinate with responsible entity to correct unsatisfactory conditions.

C Commencement of work by installer is acceptance of substrate conditions.

3.02 Preparation

A Protection: Prevent work from occurring on the opposite of walls to which manufactured stone cladding is applied during and for 48 hours following installation of the manufactured stone cladding.

B Surface Preparation: Follow manufacturer's instructions designated below for the appropriate type of manufactured masonry and substrate.

3.03 Installation

Manufacturer's installation instructions cover normal installation conditions. Unusual conditions may require additional information in this article. Follow manufacturer's recommendations for type of stones to be installed with mortarless joints.

A Install Cultured Stone products in accordance with manufacturer's Cultured Stone installation instructions using [grouted] [tight fitted] joints.

B Install architectural trim products in accordance with manufacturer's Cultured Stone installation instructions.

C Install/Apply Related Materials specified above in accordance with type of substrate and manufactured stone cladding manufacturer's installation instructions.

D Install weather resistant barrier in accordance with AS4200-1 Pliable Building Membranes and Underlays – Installation Requirements.

3.04 Field Quality Control

Insert number of anticipated site visits below. Delete this article if manufacture's field services are not required.

A Manufacturer's Field Services: Provide _____ periodic site visits, each of approximately [one] [_____] hours duration.

3.05 Cleaning

A Clean manufactured masonry in accordance with manufacturer's installation instructions.

3.06 Protection

A Protect finished work from rain during and for 48 hours following installation.

B Protect finished work from damage during remainder of construction period.

BCC 12054 Jul13
(Update of 10735 Apr12)
BLA 04Jul13

National Enquiries

Telephone **1300 360 255**

Website **www.boral.com.au/stone**
