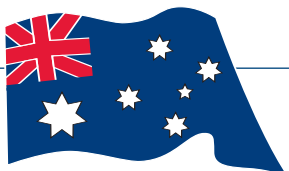
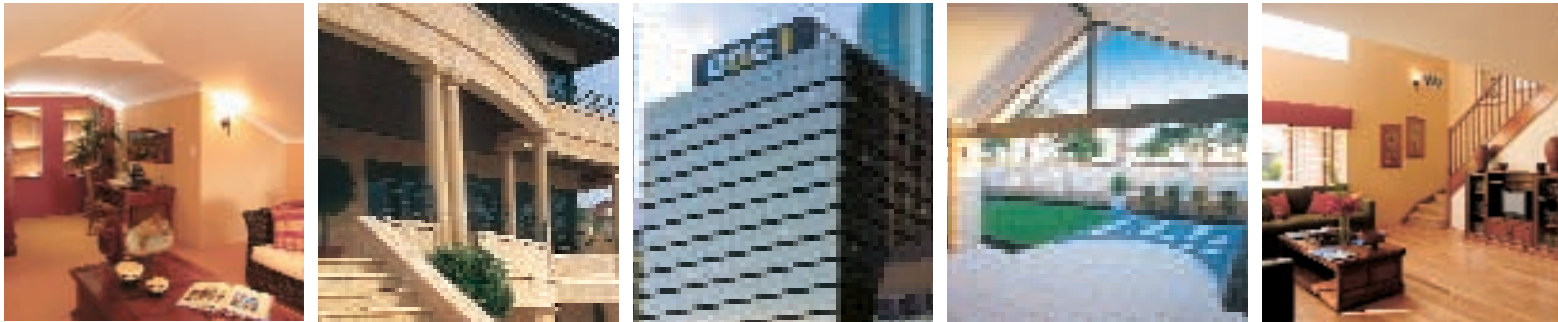


Installation Manual

PLASTER BOARD - CEILINGBOARD - CORNERS



BGC Plasterboard

Before commissioning a Plasterboard plant in Australia, BGC researched the world's foremost plasterboard manufacturing countries, in order to adopt the most advanced production techniques, available today.

Our highly professional team of engineers and skilled personnel maintain world class plant and equipment at our Western Australian factory premises and, together with the Company's pursuance of manufacturing excellence, assures the specifying and building industry of quality BGC Plasterboard products.

As a wholly owned, privately operated Australian company, BGC recognises the importance of product Research and Development programmes. Continued investment into this discipline ensures BGC will remain a leader in the manufacturing and supply of quality building products and materials.



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BGC PlasterBoard

BGC PlasterBoard is purpose designed as a complete plasterboard wall and lining system, which complies with the requirements of the Building Code of Australia (BCA). BGC PlasterBoard has been tested by the CSIRO (Manufacturing & Infrastructure Technology) in accordance with AS 2588 - 1998: Gypsum PlasterBoard; see report DTS698, April 2003.

BGC PlasterBoard internal lining provides a flat blemish free, monolithic, smooth surface ready for decorative paint and thin cover finishes for homes, offices and institutional buildings, where cost effectiveness is paramount.

BGC PlasterBoard is to be installed as detailed in AS 2589.1;1997 'Gypsum Linings in Residential and Light Commercial Construction - Application and Finishes'.

Support framing must conform to the BCA and Australian Standards, be plumb, true and level, prior to the application of the plasterboard, see table 2 page 6.

BGC PlasterBoard may be fixed to timber or CFS (Cold-Formed Steel) light-steel framing or masonry, using plasterboard screws, nails and or adhesive.

Only screws or nails must be used for tiled areas and over existing lining or vapour barriers.

Jointing is effected with Plaster Cement Jointing Compounds and paper tape, to give reinforced crack-resistant and seamless surfaces.

Key Benefits

- Cost effective, easy to install drywall system.
- Seamless, smooth monolithic appearance.
- Excellent fire resistance and acoustic performance.
- High serviceability performance.

PlasterBoard Finish Selection

Selecting the level of finish of the internal lining depends on the function of the space, lighting and the desired decorative surfaces required.

For most applications, Finish Levels 3, 4 or 5 are used, as detailed in AS 2589.1.

Level 3 is used, where heavy to medium texture finishes are applied and the lighting is non-critical.

Level 4 is most commonly used in commercial and residential work, where the finishes are satin, flat or low sheen paint systems and the lighting is non-critical.

For large area walls and ceilings, where critical and severe glancing lighting have an effect, a Level 5 finish must be used to minimize any adverse effects of harsh lighting.

Early Fire Hazard Indices

BGC PlasterBoard has been tested by the NATA accredited AWTA for fire resistance in accordance with AS 1530.3 - 1999; see Report Test Number: 7-518246-CN, April 2003.

- Ignitability Index - 13
- Spread of Flame Index - 0
- Heat Evolved Index - 1
- Smoke Developed Index - 3

Sheet Sizes - Table 1

THICKNESS	WIDTH	2400	2700	3000	3600	4200	4800	5400	6000
BGC PlasterBoard	1200	✓	✓	✓	✓	✓	✓	✓	✓
10mm Recessed Edge	1350			✓	✓	✓	✓		✓
BGC CeilingBoard	1200	✓	✓	✓	✓	✓	✓	✓	✓
10mm Recessed Edge	1350	✓		✓	✓	✓	✓		✓
BGC PlasterBoard	1200	✓	✓	✓	✓	✓	✓	✓	✓
13mm Recessed Edge	1350	✓		✓	✓	✓	✓		
BGC WR PlasterBoard	1200	✓	✓	✓	✓	✓			
10mm	1350	✓		✓	✓	✓	✓		
BGC WR PlasterBoard	1200	✓	✓	✓	✓	✓			
13mm	1350			✓	✓	✓			

Note: The range of stock sheet sizes available may vary from state to state. 900mm wide sheets are available in WA only. RE/SE available on request - minimum order requirements apply.

Availability - BGC Plasterboard ensures that the range of stock sheet sizes listed are available, however variations may occur in some states.



INSIDE THE 32,000m² BGC PLASTERBOARD MANUFACTURING, WAREHOUSING & DISTRIBUTION COMPLEX AT HAZELMERE, WESTERN AUSTRALIA.

Installation

BGC Plasterboard recommends that this section should be read in conjunction with the architects' specifications to determine the Level of Finishes.

BGC PlasterBoard should be installed after all preceding trades have been completed.

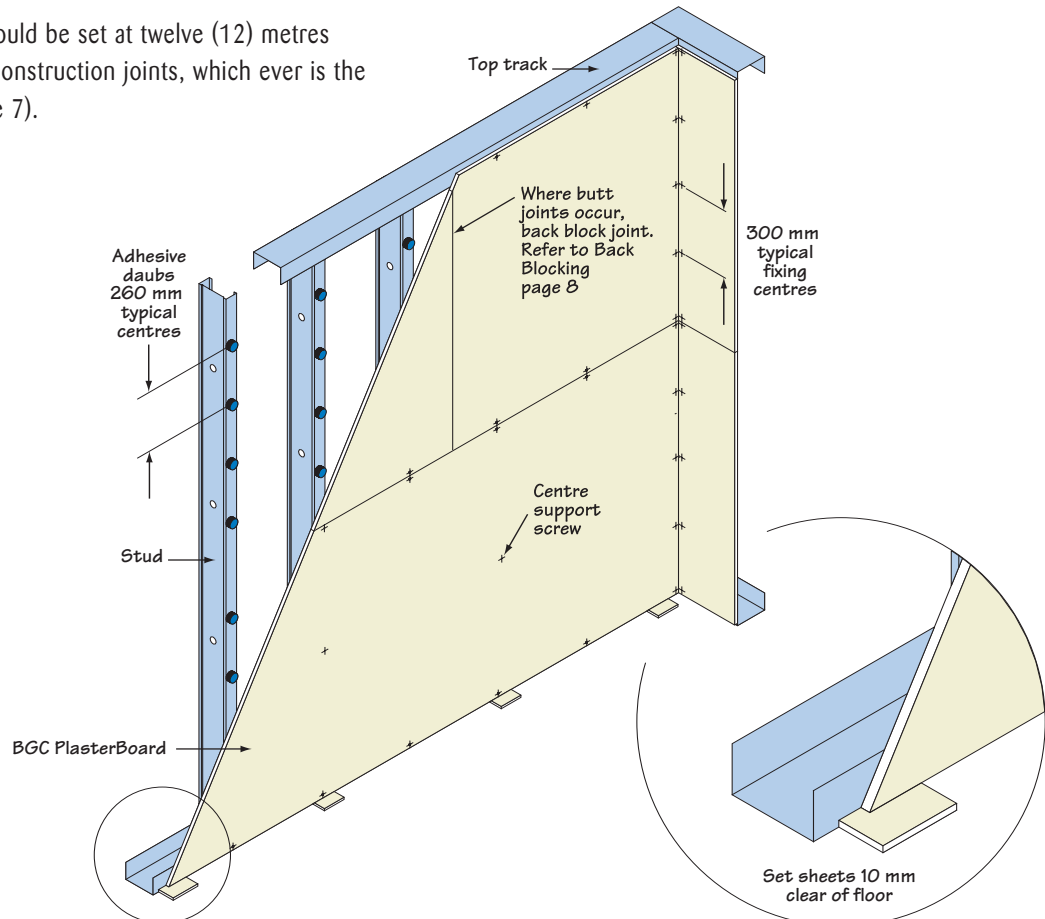
Ceilings should be installed first. BGC CeilingBoard should preferably be fixed with their long edges perpendicular to the windows or light sources, to obviate unwanted light reflections across the joints.

For the walls, BGC PlasterBoard sheets should be laid with their long edges horizontal, to minimise the number of joints as well as light reflections across the joints. This is most important when Finish Levels 3, 4 or 5 are specified, as indicated in Table 2 page 6.

BGC PlasterBoard may be cut by scoring the face side and snapping back away from the score. Then cut the paper face on the second side following the original score line. Neat straight cuts can be made using a straight edge.

The cut edges should be sanded smooth to form clean joints.

Control joints should be set at twelve (12) metres maximum, or at construction joints, whichever is the lesser (refer page 7).



Framing

BGC PlasterBoard may be fixed to timber, CFS light-steel framing or furring channels, which satisfy the BCA requirements and which have been plumbed true and straight.

Timber framing must comply with the requirement of AS1684 'National Timber Framing Code' and AS1720.1-1997 'Timber Structures' and have a moisture content less than 16% at time of lining.

CFS light-steel framing must be in accordance with AS4600 'Cold-Formed Steel Structure Code', AS3623-1993 'Domestic Metal Framing' and AS1397-2001.

BGC PlasterBoard may be fixed to CFS steel framing not exceeding 1.25mm BMT.

Framing members must have a 35mm minimum face width for nail fixing and 32mm for screw fixing.

Framing Cont...

Frames must be plumbed true and straight, to comply with the degree of finish required of the BGC PlasterBoard.

The tolerance deviation over 1.8m spans, along and across members, for 90% of the wall framing, shall be as set out in Table 2.

Table 2

Level of Finish	Max Frame Alignment Deviation
Class 3	5 mm (1/360)
Class 4	4 mm (1/450)
Class 5	3 mm (1/600)

Maximum spacing of framing members depends on the structural requirements for the building, in accordance with AS1170 and AS4055, however the maximum allowable spacing for studs, joists, furring channels or battens shall be as set out in the Table 3.

Table 3

BGC PlasterBoard	Application	Max. Spacing of Framing Member
BGC PlasterBoard 10mm Recessed Edge	Walls	600 mm
	Ceiling	450 mm
BGC CeilingBoard 10mm Recessed Edge	Walls	600 mm
	Ceiling	600 mm
BGC PlasterBoard 13mm Recessed Edge	Walls	600 mm
	Ceiling	600 mm
BGC WR PlasterBoard 10mm Recessed Edge	Walls	600 mm
	Ceiling	600 mm
BGC WR PlasterBoard 13mm Recessed Edge	Walls	600 mm
	Ceiling	600 mm

Trimmers are to be used where the main structural members change direction and all openings must be framed.

Adhesive, Nails or Screws

BGC PlasterBoard may be fixed to the framing with either adhesive, nails or screws as appropriate.

Water-based acrylic gypsum plaster adhesives, which comply with AS2753, are suitable for fixing BGC PlasterBoard to both metal and timber framing.

Adhesive fixing is used in conjunction with fasteners, except for wet and tiled areas, fire-rated construction, over vapour-barriers or existing work, where mechanical fasteners, nails or screws must be used.

The position of daubs of adhesive 'O' and permanent fasteners 'X' should be as set out as shown in the Table 4.

Table 4

Position & Number of Adhesive Daubs and Fasteners Across Sheet			
Sheet Width	Wall	Ceilings	Ceilings
1200	XOOOOX	XOOXXOOX	XOXOXOX
1350	XOOOOOX	XOOXXOOX	XOXOXOX

Ensure that contact surfaces are free from grease, oil, dust or other loose material prior to placing adhesive daubs (always clean down steel furring before fixing PlasterBoard sheeting).

Galvanised 2.8mm standard or ring-shank clouts are used to fix the BGC PlasterBoard to timber, see Table 5.

Table 5

Minimum Nail Fastener Length

Sheet Thickness	Hardwood	Softwood
10mm	30mm	30mm
13mm	30mm	40mm

Needle-point (NP) or self drilling and tapping point (SDP), bugle-head screws are used to fix to CFS light steel framing, and must comply with AS3566, see Table 6.

Table 6

Minimum Screw FASTER Length and Type

Sheet Thickness	CFS Steel up to 0.55 BMT	CFS Steel 0.75 to 1.1 BMT
10 mm	6-9 x 25 NP	6-18 x 25 SDP
13 mm	6-9 x 30 NP	6-18 x 30 SDP

Note: When fixing into preservative treated timbers, **Class A** AS 3566 coatings of screws and nails are to be used.

Adhesive Fixing to Framing

Walls

Daubs of adhesive, 25mm diameter x 15mm high, are positioned in the pattern as shown in Table 4, spaced at a maximum of 300mm and a minimum of 200mm.

Adhesive must not be used at wall-to-wall and wall-to-ceiling junctions, around openings, butt joints or fastener points.

BGC PlasterBoard is placed horizontally along each wall. Sheets to be packed 10mm from floor and fastened along the top recessed edge at each stud or furring channel.

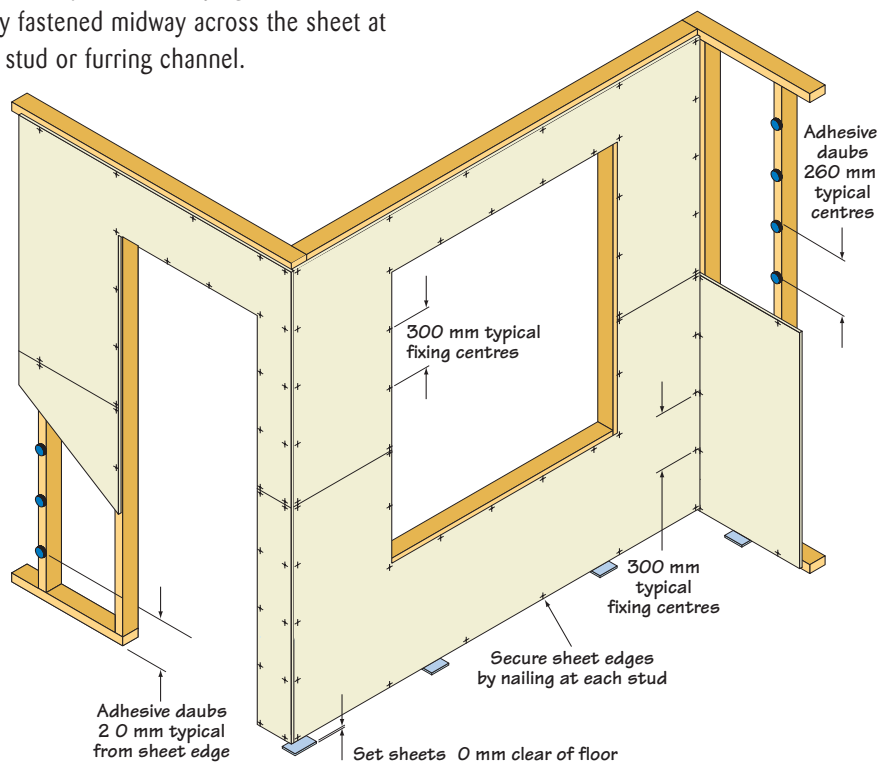
The sheets are then pressed firmly against the studs and temporarily fastened midway across the sheet at every second stud or furring channel.

Next, fasten the other recessed edge at each stud, or furring channel.

Fasteners must not coincide with adhesive daubs, and fasteners should be kept to a minimum distance of 200mm from adhesive daubs.

Fasteners around openings should be placed at a maximum spacing of 300mm centres.

Allow at least 24 hours for the adhesive to set.



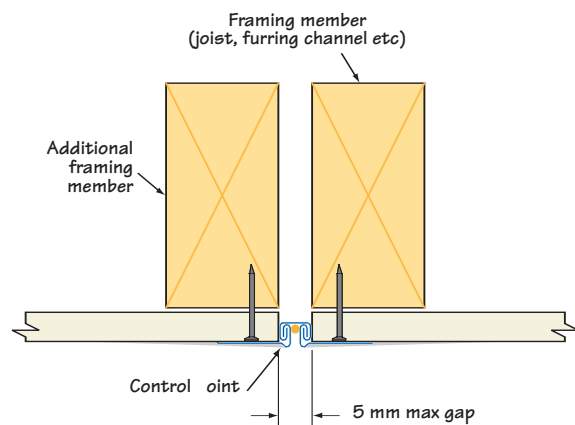
Control Joints

Control joints must be installed in walls and ceilings at a maximum spacing of 12m, or at control/construction joints, whichever is the lesser.

Architectural features, openings, and the like may be used as control joint set out points.

Rondo 'P35' or MBS 'PXJ-30' are suitable control / expansion joints.

Control joints are centrally located across the 15mm minimum gap between adjacent BGC PlasterBoard sheets, and the flanges nailed at 300mm centres to the framing behind.



Adhesive Fixing to Framing Cont...

Ceilings

Adhesive daubs, 25mm dia. x 15mm high, are positioned in the pattern as shown in Table 4, spaced at maximum of 250mm and minimum of 200mm centres.

Adhesive must not be used at wall-to-wall and wall-to-ceiling junctions, around openings, butt joints or fastener points.

BGC CeilingBoards are placed at right angles to the ceiling joists, battens or furring channels, and fastened along one recessed edge at each joist, batten or furring channel.

Next, press the sheets firmly against the framing, and fix two nails (for timber framing) or one screw (for CFS

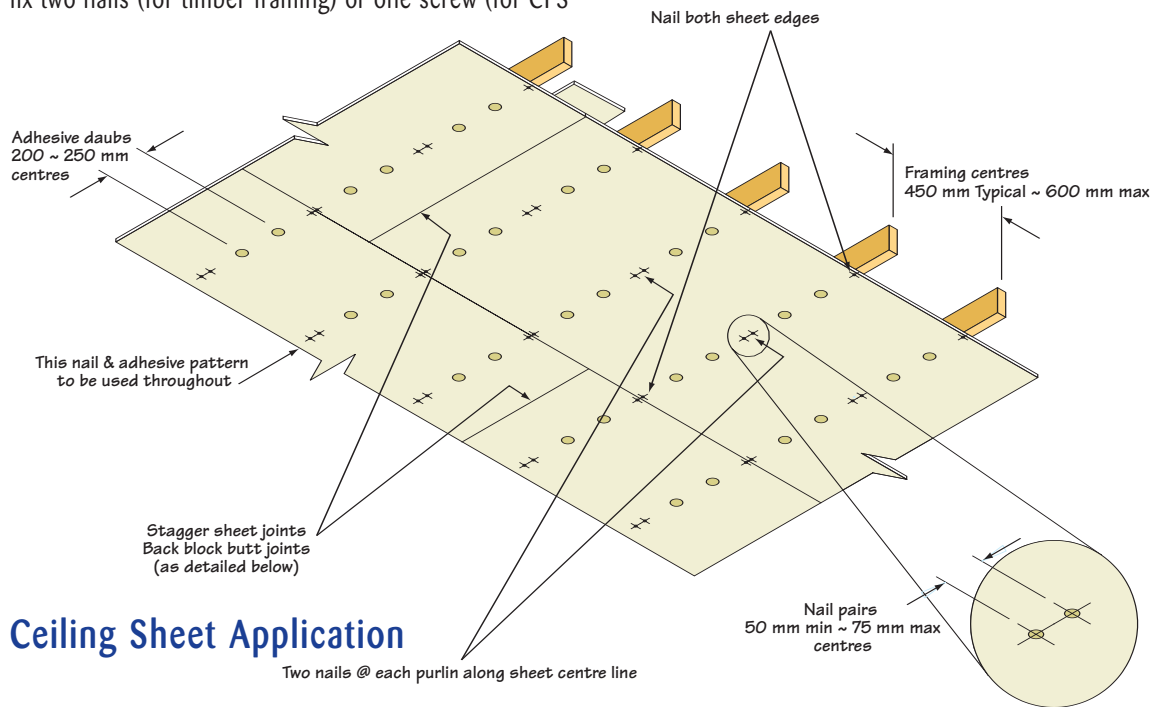
steel framing), along the centre of the sheet at each framing member.

Then, fasten off the sheets along the other recessed edge, at each framing member.

Fasteners must not coincide with adhesive daubs, and fasteners should be kept to a minimum distance of 200mm from adhesive daubs.

Where allowed, fasteners at butt joints and around openings should be placed at a maximum spacing of 150mm for nails and 200mm for screws.

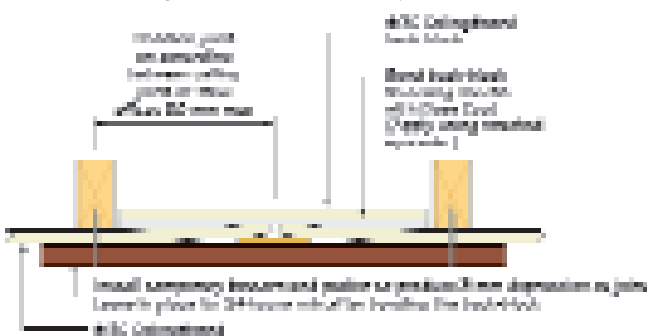
Allow at least 24 hours or 48 hours in slow drying weather, for the adhesive to set.



Ceiling Sheet Application

Back Blocked Joints

Back blocking must be done before joints are set.



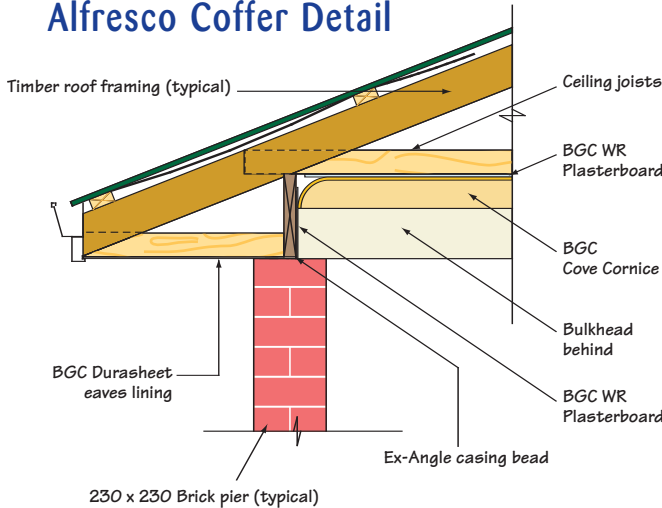
Back-blocking is used to reinforce unsupported butt or recessed joints and must be positioned midway between supporting members, in ceilings and walls. Back blocking must be used in open areas of ceilings (back of recessed joints) with 3 or more joints and where there is a likelihood of excessive shrinkage and movement in the structure.



Alfresco - Garage - Carport Ceilings

Ceilings to these areas should be given special design considerations due to environmental conditions.

Alfresco Coffered Detail



Alfresco/Carport

- Negative wind loads can unbond adhesive daubs during construction if not fully cured at time of pressure.
- High humidity can result in poor joint performance.

Garage

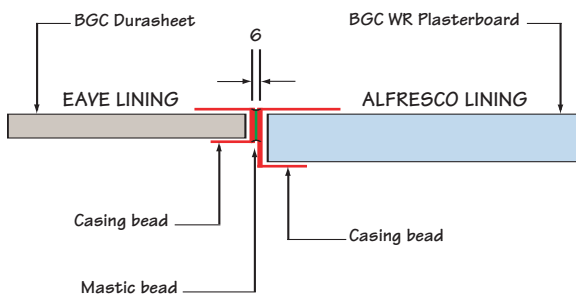
- Roller/tilt door operation can result in differential movement due to vibration resulting in positive joint cracking and adhesive unbonding.

While the finish and appearance of these areas remains the same as ceiling in habitable areas additional details are required.

- BGC Plasterboard recommends the use of WR Plasterboard with 1/3 fixings.
- Screw and glue fix only.
- Back-block all joints.
- Use of proprietary branded quality sealer prior to painting.
- Use wet area base coats in jointing system.

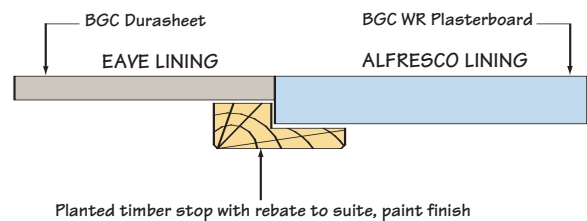
Eaves Details

Casing Bead

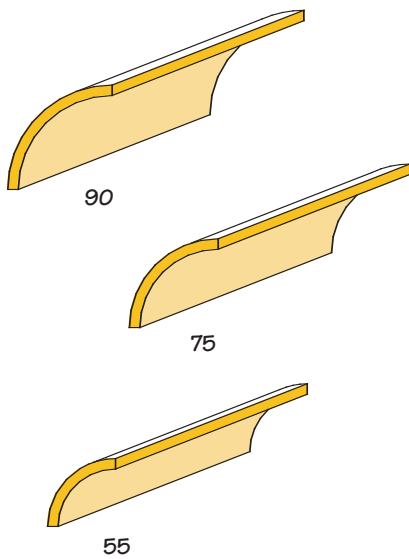


- Allows for differential movement.

Timber Stop



BGC Cove Cornice



BGC Plasterboard cove cornice is designed to give a clean continuous line at the junction of walls and ceilings, and can be used with confidence on both PlasterBoard lining and cement plastered walls alike.

BGC Plasterboard cove cornice is made of a plaster core with paper face to complement BGC PlasterBoard Ceilingboard, Cove is fixed using a proprietary branded cornice cement with few special tools required.

The use of a mitre box and hand saw for cutting internal and external corner mitres is recommended.

Availability

Table 7

Size	Lengths mm				
	3000	3600	4200	4800	5400
55mm	✓	✓	✓	✓	✓
75mm	✓	✓	✓	✓	
90mm	✓	✓	✓	✓	✓

Fixing

- Clean down area where cornice is to be applied, remove any excess render or loose material.
- Mark a guide line to suite the bottom edge of the cornice (90, 75 or 55 down) and pre-cut lengths as required.
- All corner joints, internal and external, are to be mitred.
- Where butt joints are unavoidable, ensure both ends are prepared to align accurately.
- Apply (butter) a 10mm bead of cornice cement to both long edges and ends of the cornice.
- Locate cornice to guide lines and temporarily block as required.
- Fill mitres, cleaning off excess cement as you go.
- Remove temp blocking after cornice cement has set (as specified by cement manufacturer).
- Apply second topping coat to mitres and joints as required. **Note:** only ever butter one length at a time and install immediately.

Contact surface may require damping down prior to fixing cornice, depending on drying conditions.

Jointing Application

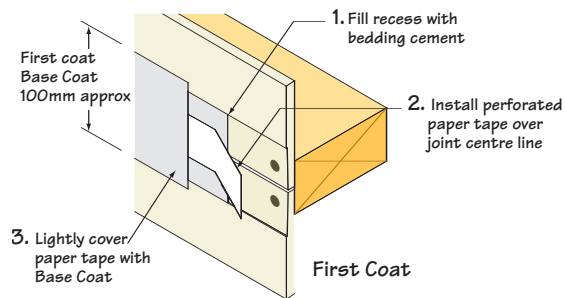
Paper tape joints produce stronger and more enduring results than those that are set with fibreglass tapes.

BGC Plasterboard recommends the use of paper tapes.

- Self-adhesive paper tapes should not be used.
- Where fibreglass tape joints are used, they must be back blocked before the joints are set (in accordance with the instructions set out in Back Blocking, page 8).

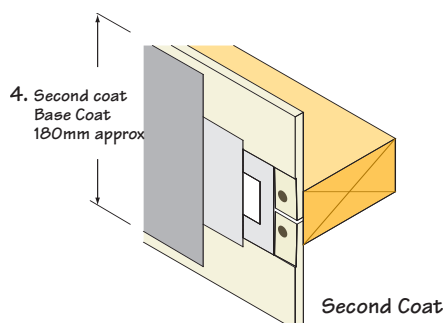
Tape & First Coat

- Apply the Base Coat bedding cement to fully fill the recess of the joint.
- Centrally bed the perforated paper tape into bedding coat, cement and cover lightly with Base Coat.
- Stop-up all fixing points and apply Base Coat to any damaged areas.
- Allow the Base Coat to set and dry for a minimum of 24 hours or 1 hour for setting type cements (or as per compound manufacturers recommendation).



Second Coat

- Lightly sand the first coat.
- Check the Level of Finish required in the architects' specification, before applying the second coat as detailed in Table 2 and PlasterBoard Finish Selection (page 3), for the correct Finish Coat required.
- Apply the second Base Coat 180mm wide over the joints, making sure to feather out the edges.
- Apply a second coat to all fasteners and damaged areas, feathering out by about 25mm
- Allow the second coat to set and dry for a minimum of 24 hours or 1 hour for setting type cements (or as per compound manufacturers recommendation)..

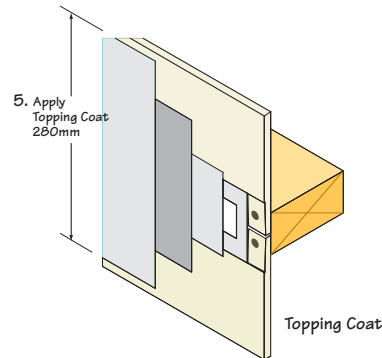


Finish Coat

- Lightly sand the second coat.
- Apply a thin finish coat, centrally over second coat, after it has set and hardened.

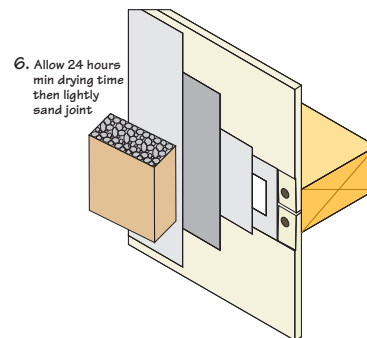
Dampen the outer edges of the Finish Coat, with a sponge to feather out the Finish Coat about 280mm wide.

- Apply a thin Finish Coat over all fasteners and damaged areas,



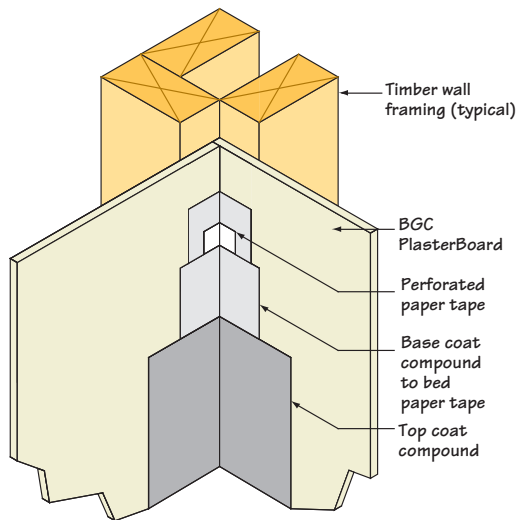
Sanding and Finishing

- Allow the Finish Coat to dry at least 24 hours.
- Lightly sand smooth with 150 grit paper or with 220 sanding mesh.
- Wipe off excess dust with a slightly damp cloth.

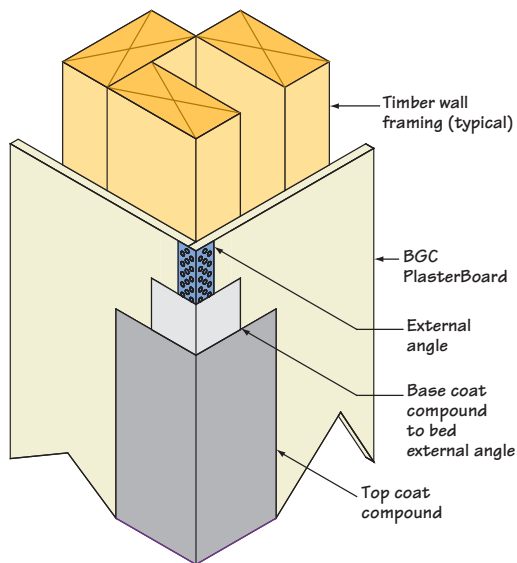


BGC PlasterBoard will perform to the architects' specification and the Australian Building Codes, provided all procedures are followed as per the compound manufacturers' specification.

Internal Corner Detail

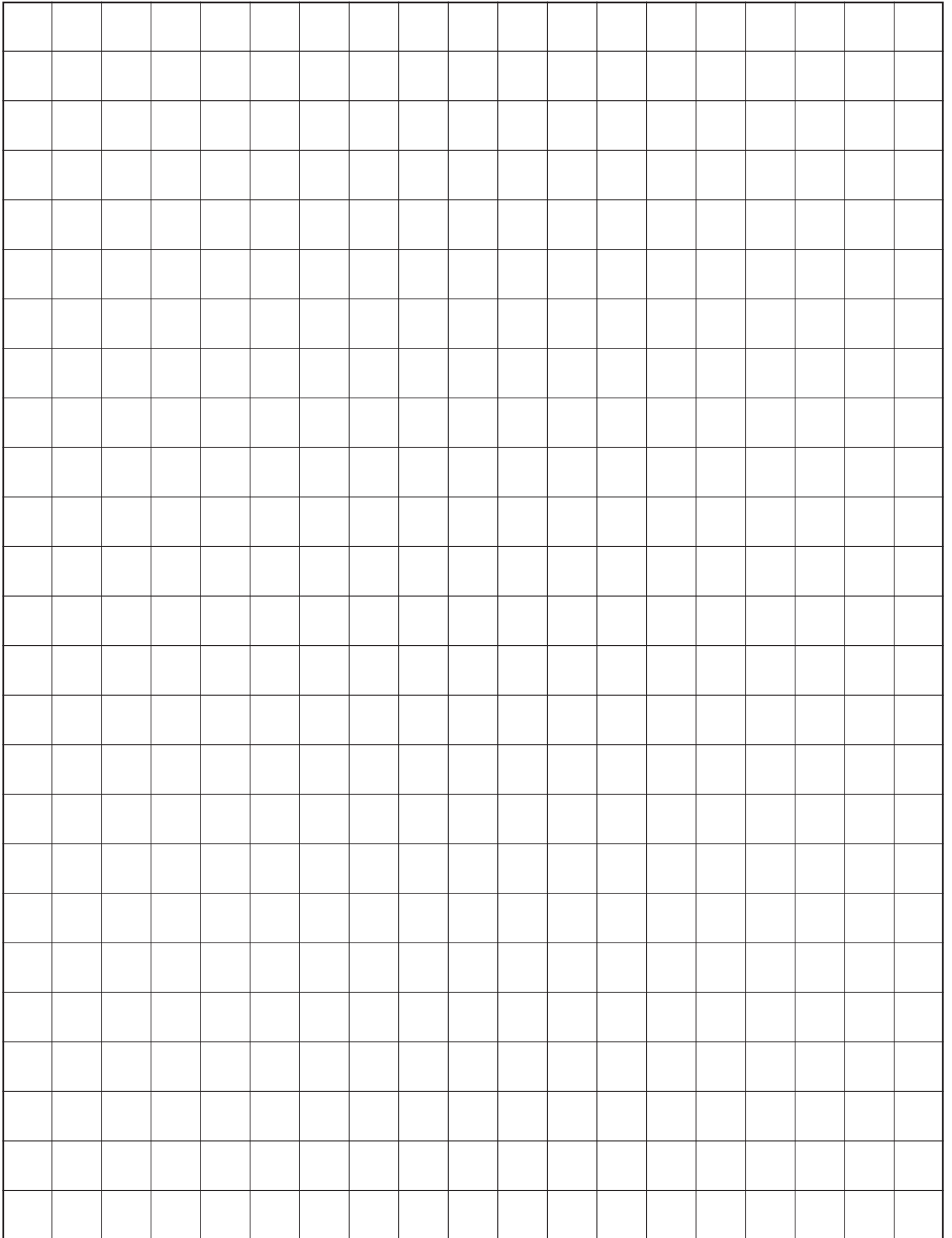


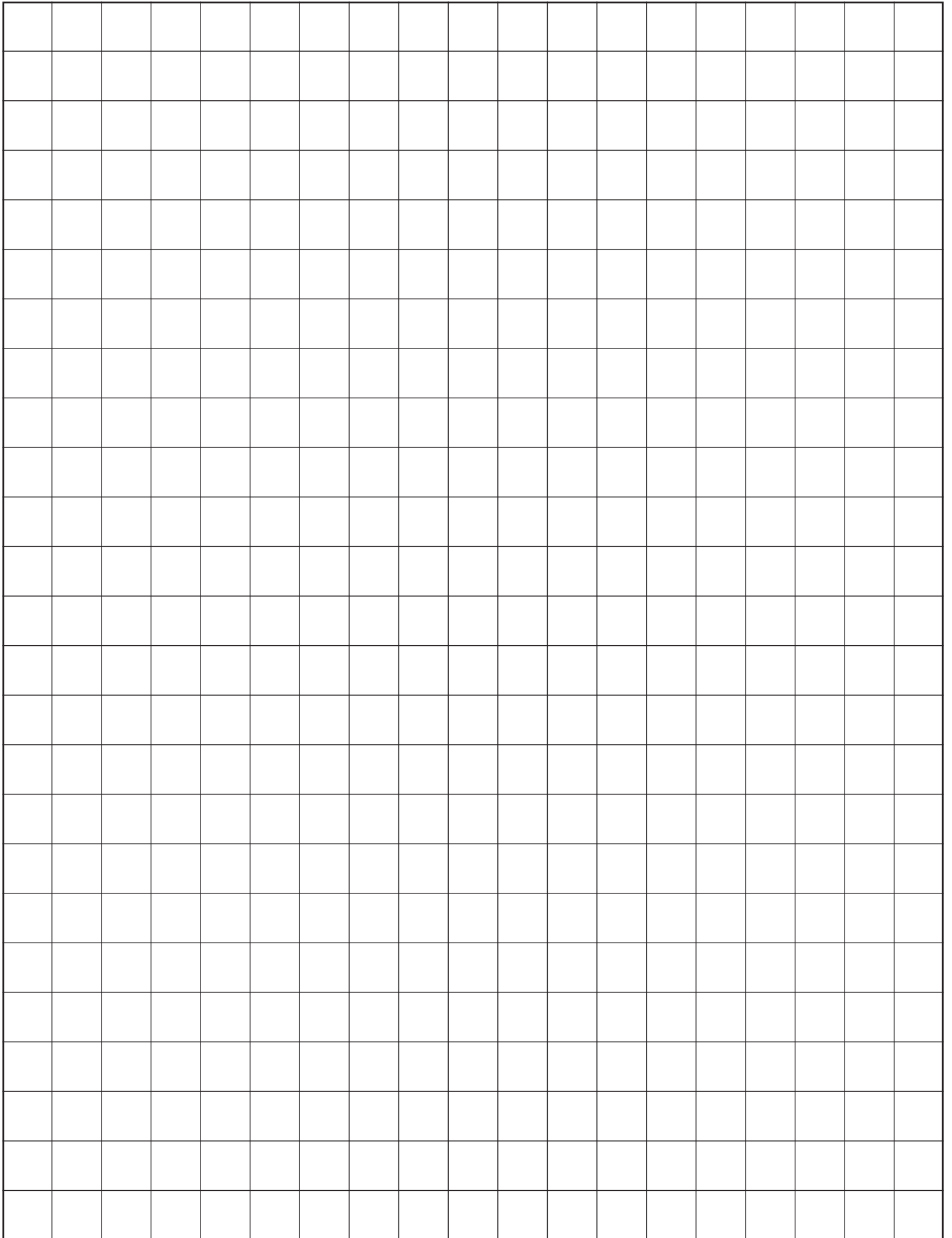
External Corner Detail



Decoration

- **Note:** BGC Plasterboard does not recommend spray painting ceilings to achieve level 4 or higher finish.
- Ensure all stopping of joints and nail holes is completed to AS/NZ 2589.1:1997
- Brush down area prior to painting to ensure board is free from sanding dust.
- Roller apply a proprietary branded quality sealer, to the entire sheet area including joints, followed by two coats of full weight flat acrylic paint.
- Choice of colour should be considered carefully - darker colours will exacerbate any defects and highlight any imperfections.
- Where high humidity is of concern, ensure the chosen painting system will protect joints from moisture absorption.





BGC (Australia) Pty Ltd

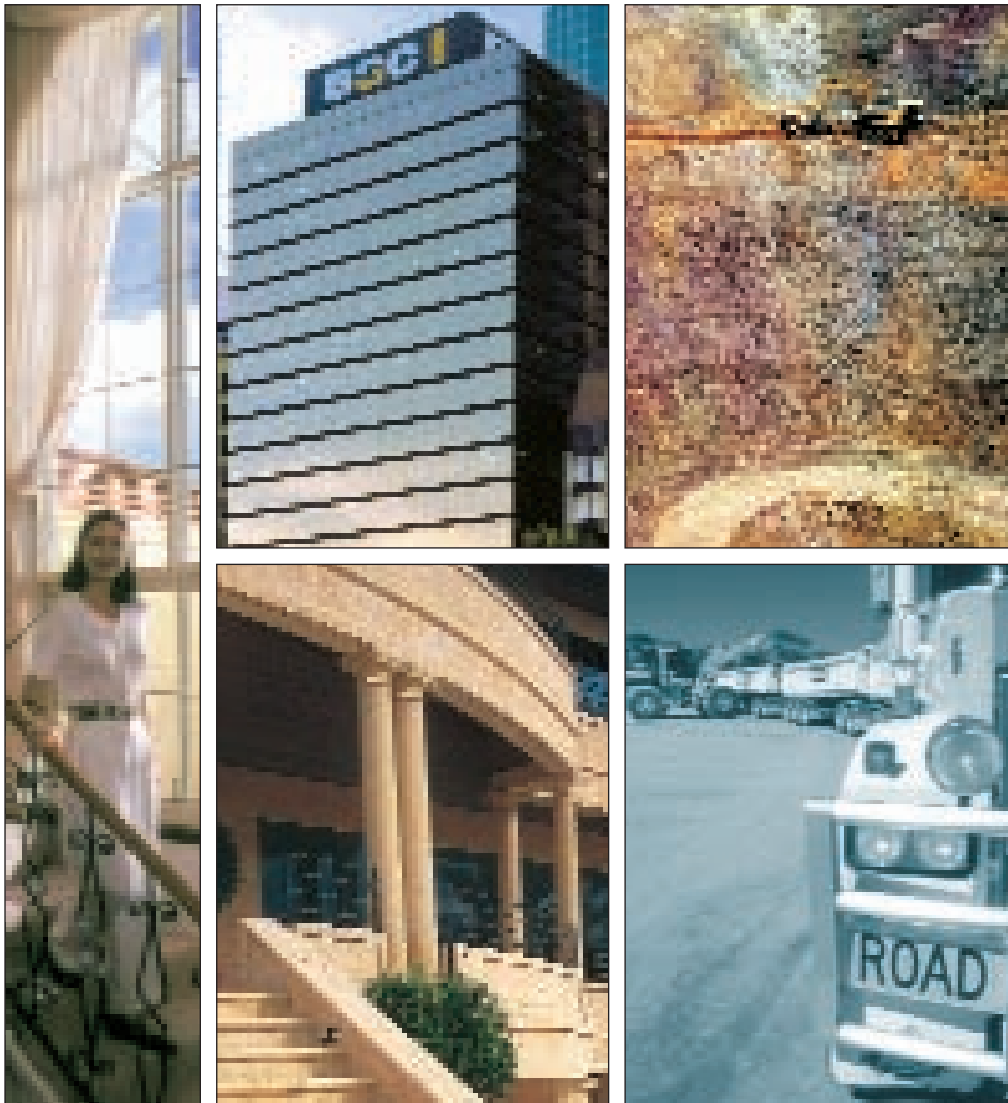
BGC (Buckeridge Group of Companies), has developed into a diversified industrial group with an annual turnover that makes it one of Australia's largest, privately - owned companies.

Its wide range of operations includes manufacturing, residential and commercial building, property ownership and management, contract mining, bulk haulage, quarrying and insurance. It is the largest residential building company in Western Australia, and one of the biggest in the nation.

A decentralised management structure allows each of the autonomous business units the flexibility to make individual business decisions, along with the knowledge and backing of sound corporate experience.

The West Australian - based group has operations in each of Australia's mainland states with an international reach that extends to New Zealand and South East Asia. BGC is also exporting its products to growing markets in both Singapore and Hong Kong.

BGC stands by its quality, commitment and capacity to provide outstanding results for any building activity.



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Warranty

BGC warrants its products to be free from defects caused by faulty manufacture or materials. If any of its products are so defective the Company will at its option, repair or replace them, supply equivalent replacement or reimburse the purchase price.

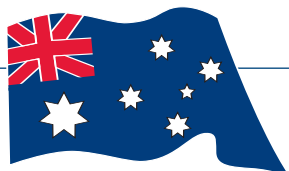
This warranty shall not apply to any loss or consequential loss suffered through or resulting from defects caused by faulty manufacture or materials.

The propriety joint and coating systems are outside the control of BGC, therefore the independent joint and coating manufacturers must give all warranties for the jointing system performance.

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