

JULY 2010



**NULINE™**  
WEATHERBOARD



**BGC** | Fibre Cement

AUSTRALIAN OWNED & MANUFACTURED  
[WWW.BGC.COM.AU/FIBRECEMENT](http://WWW.BGC.COM.AU/FIBRECEMENT)

## INTRODUCING INNOVA™

INNOVA™ IS A BRAND NEW RANGE OF FACADE AND FLOORING PRODUCTS WHICH WILL GIVE A NEW DIMENSION TO THE BGC PRODUCT RANGE. THE PRODUCTS WITHIN THE INNOVA RANGE HAVE BEEN DESIGNED TO INSPIRE YOU TO CREATE A NEW INNOVATIVE AND DYNAMIC FACADE OR FLOORING SYSTEM.



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NULINE™ IS A UNIQUE, WEATHERBOARD-STYLE CLADDING SYSTEM THAT LOOKS LIKE REAL TIMBER WEATHERBOARD, BUT DOESN'T COME WITH ANY OF THE MAINTENANCE ASSOCIATED WITH NATURAL TIMBER WEATHERBOARD CONSTRUCTIONS.

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THE NULINE™ WEATHERBOARD EXTERNAL CLADDING SYSTEM:

- / FEATURES A LEVEL JOINING SYSTEM, WHICH GIVES A SEAMLESS FINISH
- / IS QUICK AND EASY TO CUT, HANDLE AND INSTALL
- / COMES IN TWO DIFFERENT PROFILES- OFFERING 'DESIGN' CHOICE
- / IS DURABLE
- / WON'T ROT OR DECAY
- / IS LOW MAINTENANCE
- / OFFERS A RANGE OF ATTRACTIVE CORNER AND END FINISHES
- / IS ENVIRONMENTALLY FRIENDLY
- / IS FIRE RESISTANT
- / IS TERMITE RESISTANT
- / ACHIEVES BAL 40 AS REQUIRED IN AS3959:2009 – CONSTRUCTION OF BUILDINGS IN BUSHFIRE PRONE AREAS
- / QUICK AND SIMPLE TO INSTALL USING MANUAL NAILING, GUN NAILING OR SCREW FIXING



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## PRODUCT DESCRIPTION

NuLine™ Weatherboards are a general-purpose fibre cement cladding for external applications. They are manufactured as planks, which are reminiscent of traditional weatherboards both in appearance and installation methods.

NuLine™ Weatherboards are not subject to timber rot, decay, or white ant damage and will not support combustion. The result is a safer, more durable cladding that requires minimum maintenance.

NuLine™ is available in a smooth finish. At 14 mm thick, NuLine™ has the strength to withstand the rigours of all normal family activities.

## ADVANTAGES

- / Features a level joining system utilising a biscuit joiner
- / Quick and easy to cut, handle and install
- / Durable and low maintenance
- / Won't rot or decay
- / Environmentally friendly

## ENERGY EFFICIENCY CONSIDERATIONS

Energy efficiency requirements have been introduced into the Building Code of Australia (BCA) for both commercial and residential buildings. Thermal heat transfer into and out of the building envelope will effect the running cost of the building and careful consideration of thermal heat transfer needs to be addressed by the architects, engineers and building designers. Thermal bridging through steel framing will diminish the total R-Value; thermal conductance, of the wall. Thermal breaks are required for steel framed buildings and should be installed between the Peer top hat sections and the Duracom™ cladding. Thermal break tapes should have a minimum R-Value of 0.2.

## PRODUCT INFORMATION

NuLine™ Weatherboards are manufactured from Portland cement, finely ground silica, cellulose fibres and water. Planks are cured in a high-pressure steam autoclave to create a durable, dimensionally stable product.

NuLine™ Weatherboard fibre cement products are manufactured to conform to the requirements of AS2908.2 Cellulose-Cement Products and are classified as Type A Category 3 for external use.

## FIRE RESISTANCE

BGC Fibre Cement products have been tested in accordance to Australian Standard AS1530.3 – 1989.

These tests deemed the following Early Fire Hazard Indices:

/ Ignition Index	0
/ Spread of Flame Index	0
/ Heat Evolved Index	0
/ Smoke Developed Index	0-1

## PANEL SIZES AND MASS

Nuline™ weatherboard panels are available in the following sizes.

THICKNESS mm	MASS KG/M <sup>2</sup>	WIDTH mm	LENGTH mm
14	4.13	175 Smooth	4200
	4.83	205 Smooth	4200

Sizes available in Square and Bullnose profiles.

## PLANK TOLERANCES

- / Width +0/-1 mm
- / Length +0/-2 mm
- / Thickness +10%/-0%
- / Diagonals difference (max) 2 mm
- / Edge straightness deviation (max) 1 mm

## PROFILES

### BULLNOSE



### SQUARE



## HEALTH AND SAFETY

BGC NuLine™ is manufactured from cellulose fibre, finely ground sand, Portland cement and additives. As manufactured, the product will not release airborne dust, but during drilling, cutting and sanding operations cellulose fibres, silica and calcium silicate dust may be released.

Breathing in fine silica dust is hazardous and prolonged exposure (usually over several years) may cause bronchitis, silicosis or cancer.

## AVOID DUST INHALATION

When cutting planks, work in a well-ventilated area and use the methods recommended in this literature to minimise dust generation. If using power tools wear an approved (P1 or P2) dust mask and safety glasses.

These precautions are not necessary when stacking, unloading or handling fibre cement products.

For further information or a Material Safety Data Sheet contact the nearest BGC Sales Office or go to [www.bgc.com.au/fibreceement](http://www.bgc.com.au/fibreceement)

## QUANTITIES READY RECKONER

Table 1 is provided to assist in calculating the number of planks required to cover a given wall height.

For triangular areas such as Gable ends, halve the quantities derived for a rectangular wall then add 10% to cover off cuts.

Table 1 Plank Course Ready Reckoner

PLANK COURSES	WALL HEIGHT	
	175 mm PLANK 30 mm OVERLAP	205 mm PLANK 30 mm OVERLAP
1	175	205
2	320	380
3	465	555
4	610	730
5	755	905
6	900	1080
7	1045	1255
8	1190	1430
9	1335	1605
10	1480	1780
11	1625	1955
12	1770	2130
13	1915	2305
14	2060	2480
15	2205	2655
16	2350	2830
17	2495	3005
18	2640	3180
19	2785	3355
20	2930	3530

## CUTTING AND DRILLING

Nuline planks may be cut to size on site. If using power tools for cutting, drilling or sanding they must be fitted with appropriate dust collection devices or alternatively an approved (P1 or P2) dust mask and safety glasses shall be worn. It is recommended that work always be carried out in a well-ventilated location.

The most suitable cutting methods are:

/ **DURABLADE**  
180mm Diameter.  
This unique cutting blade is ideal for cutting Fibre Cement. Can be fitted to a 185mm circular saw, ie Makita or similar. Please ensure safe working practices when using.



/ **NOTCHING**  
Notches can be made by cutting the two sides of the notch. Score along the back edge then snap upwards to remove the notch.

/ **DRILLING**  
Use normal high-speed masonry drill bits. Do not use the drill's hammer function. For small round holes, the use of a hole-saw is recommended. For small rectangular or circular penetrations, drill a series of small holes around the perimeter of the cut out. Tap out the waste piece from the sheet face while supporting the underside of the opening to avoid damage. Clean rough edges with a rasp.

Large rectangular openings are formed by deeply scoring the perimeter of the opening. Next, form a hole in the centre of the opening (refer method above) then saw cut from the hole to the corners of the opening. Snap out the four triangular segments. Clean rough edges with a rasp. (see method above) then saw cut from the hole to the corners of the opening. Snap out the four triangular segments. Clean rough edges with a rasp.

## HANDLING AND STORAGE

NuLine™ planks must be stacked flat, up off the ground and supported on equally spaced (max 300mm) level gluts.

Planks must be kept dry. When stored outdoors it must be protected from the weather. Care should be taken to avoid damage to the ends, edges and surfaces. Planks must be dry prior to fixing, jointing or finishing.

## COASTAL AREAS

The durability of galvanised nails and screws used for external cladding in coastal or similar corrosive environments can be as low as 10 years.

For this reason BGC recommend the use of stainless steel fasteners within 1km of the coast or other large expanses of salt water.

## ACCESSORIES AVAILABLE FROM BGC

INTERNAL ALUMINIUM CORNER	2700mm	
EXTERNAL ALUMINIUM CORNER	2700mm	
INTERNAL OBTUSE ANGLE	2700mm	
EXTERNAL OBTUSE ANGLE	2700mm	
J MOULD	2700mm	
STARTER STRIP	2700mm	
JOINERS	Pack of 60	

## FASTENERS

NuLine™ must be fastened at every stud (or batten for vertical installations).

Fasteners must not be placed closer than 12 mm from the plank edge.

Nails must not be driven closer than 50 mm from the plank end. Nails or fasteners can be located 20 mm minimum from the plank end if the fastener hole is predrilled. Except for straight joints, planks must be fixed a maximum of 100 mm from the plank end.

### NULINE™ TO TIMBER FRAME

No. 65 x 2.8mm galvanised flat head nails



- / For renovation projects where the original cladding is not removed, longer nails (70 x 2.8mm or longer) will be required.
- / Care is needed when using nail guns. If variability occurs the gun should be set to under drive and the nails tapped home with a hammer.

### NULINE™ TO STEEL FRAME

No. 8 x 40mm galvanised self embedding head screws



- / Screw fasteners should be located 35mm from the plank edge.

## CONSTRUCTION DETAILS

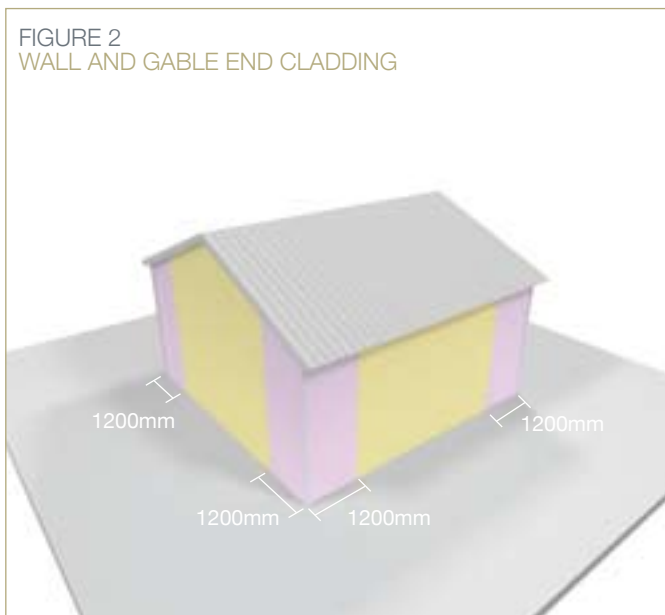
### FRAMING

In general, the layouts presented in this publication will be satisfactory for low-rise (up to two storey) domestic and light commercial buildings in non-cyclonic regions.

Buildings in cyclonic regions, high-rise buildings, large industrial and commercial complexes will generally require a specific design to be undertaken. The relevant design details pertaining to NuLine™ for various wind classifications, are presented in Figure 2.

NuLine™ is suitable for installation on either timber or lightweight steel framing.

FIGURE 2  
WALL AND GABLE END CLADDING



### TIMBER FRAMING

Timber framing must be dry prior to fixing NuLine™. If planks are fixed to 'wet' framing, problems may occur at a later date due to excessive timber shrinkage.

It is strongly recommended that kiln dried framing is used.

### LIGHT WEIGHT STEEL FRAMING

NuLine™ may be fixed directly to lightweight steel framing. The steel framing must not exceed 1.6 mm in thickness.

When rigid steel framing is used, it must be battened out with either timber or lightweight steel battens prior to fixing NuLine™ Weatherboards.

### TIMBER BATTENS

Timber battens must have a minimum thickness of 40 mm to allow adequate nail penetration.

### STEEL BATTENS

Steel battens are typically 50mm wide on the face x 35mm deep x 0.75mm thick.

## FRAMING CENTRES

Framing Centres (mm max.)	300						
	400						
	450						
	600						
	900						
AS 4055 - 1992	Non Cyclonic	N1	N2	N3	N4	N5	N6
	Cyclonic			C1	C2	C3	C4
Queensland Standard	Non Cyclonic	W28N	W33N	W41N	W50N	W60N	W70N
	Cyclonic			W41C	W50C	W60C	W70C
Wind Classification							

## GENERAL

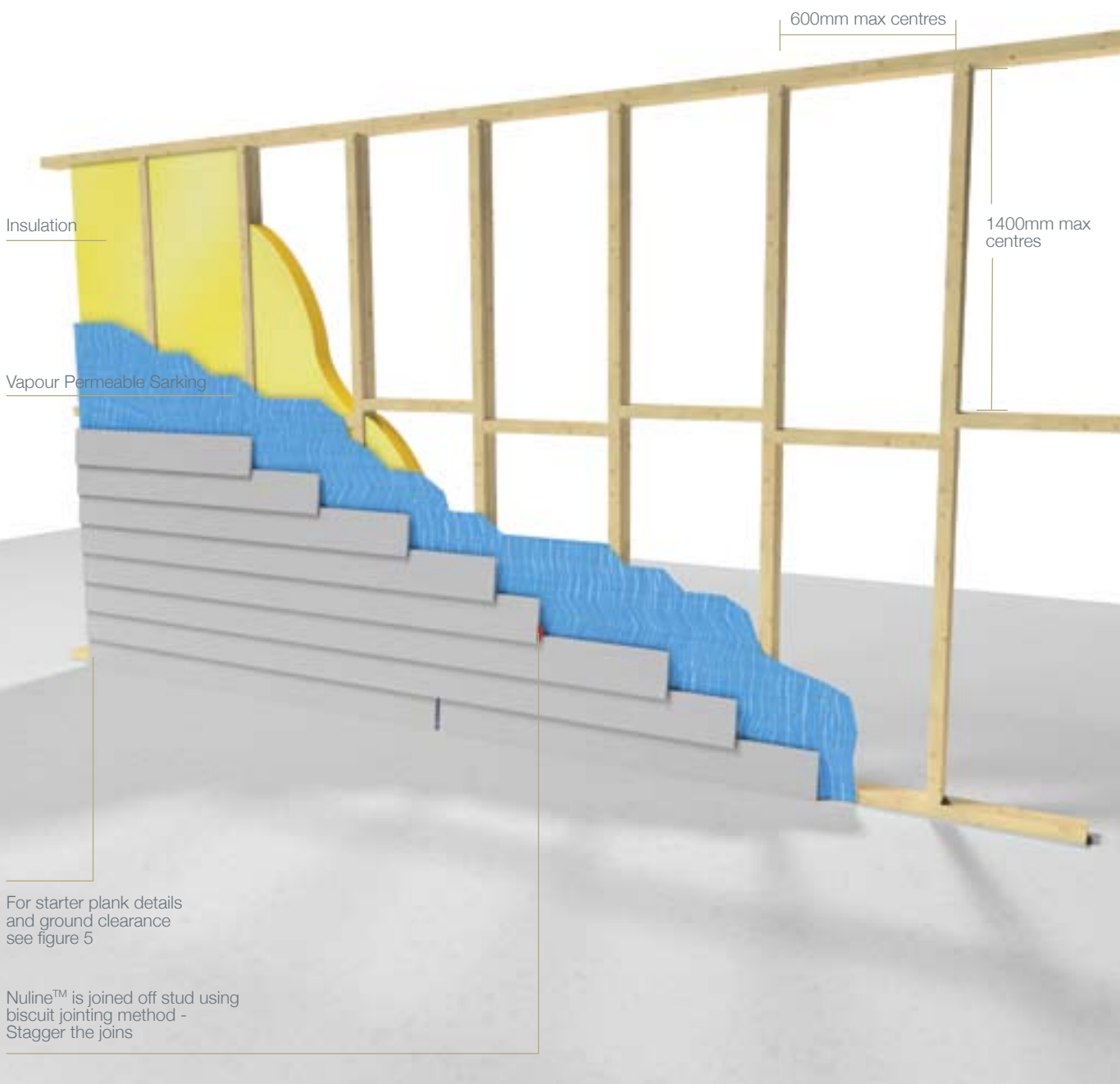
Figure 3 depicts the general framing requirements for NuLine™ installed horizontally.

## SARKING

The installation of a vapour permeable sarking between NuLine™ and the framing is recommended. The building's internal pressure will generally be less than the external air pressure under windy conditions, which will tend to draw water through the planking, flashing and seals if sarking is not used.

Use of a reflective sarking will enhance the insulation properties of the cladding system (eg. Gladiator Perforated Wall Wrap or Sisalation 499) or equivalent.

FIGURE 3  
HORIZONTAL FIXING

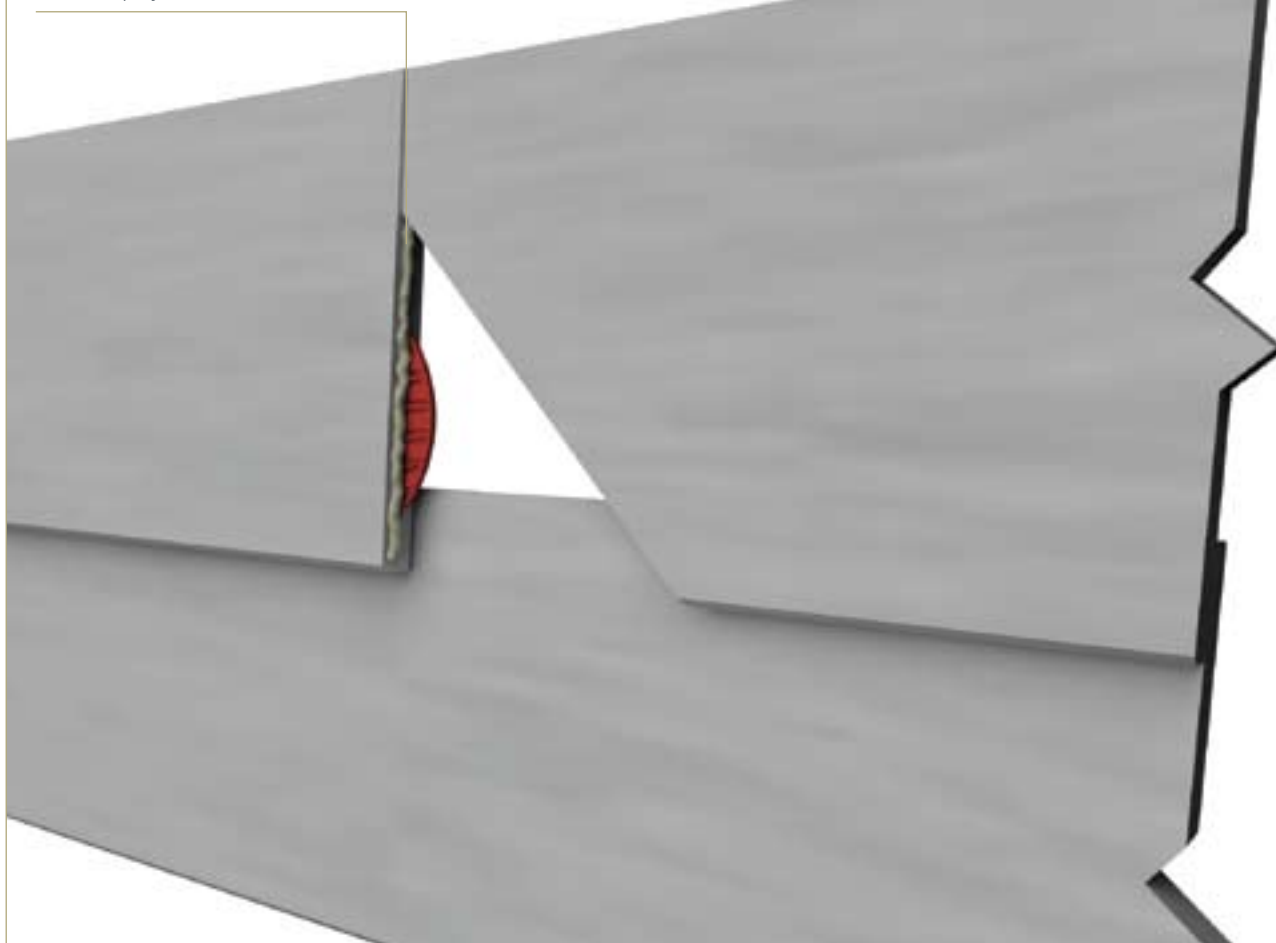


## INSTALLATION

- / Calculate the number of NuLine™ Weatherboards required using the Plank Course Ready Reckoner as detailed in Table 1, on page 5.
- / Fix all flashings to wall openings and external and internal corners. See figures 8a and 8b for corner details using BGC aluminium angles.
- / Fix a starter strip (timber or a strip of plank) to the bottom plate to ensure the first row of NuLine™ Weatherboards are packed out to the correct angle. This starter strip is to be continuous around the perimeters of the building and to overhang the slab edge by 50mm. See figure 5 for this detail.
- / Set a horizontal datum line around the perimeter of the building using a string line or spirit level. Fix guide nails/screws along this line to act as a stop for the correct placement of the first course of NuLine™ Weatherboards.
- / NuLine™ is best suited to be joined off the studs using a factory cut biscuit. See figures 3 and 4 for these details.
- / Commence fixing the bottom course of plank from an external corner. Fasten the bottom edge of the plank to each stud through the starter strip. Ensure that the plank is level and flush with the corner. Do not nail home the corner fixing at this time.
- / Fit the plank joiner (biscuit) to the end of the plank and apply a bead of sealant then continue fixing the bottom course.
- / Install extruded aluminium corners, before nailing home the corner fixing. See figure 7 for this detail.
- / The plank must overlap a minimum of 30mm, and before fixing the second row of planks calculate the overlap so a near full width of plank will finish at the top of the building. Using a piece of timber or plank, fabricate a lap gauge to ensure that the plank coverage is uniform.
- / Fixings must not be driven closer than 50mm from the end of the plank. For fixings between 20mm - 50mm from the end, the plank must be predrilled with a 3mm hole.

FIGURE 4  
PLANK JOINT USING BISCUIT

Add a 6mm bead of paintable  
silicon or polyurethane sealant



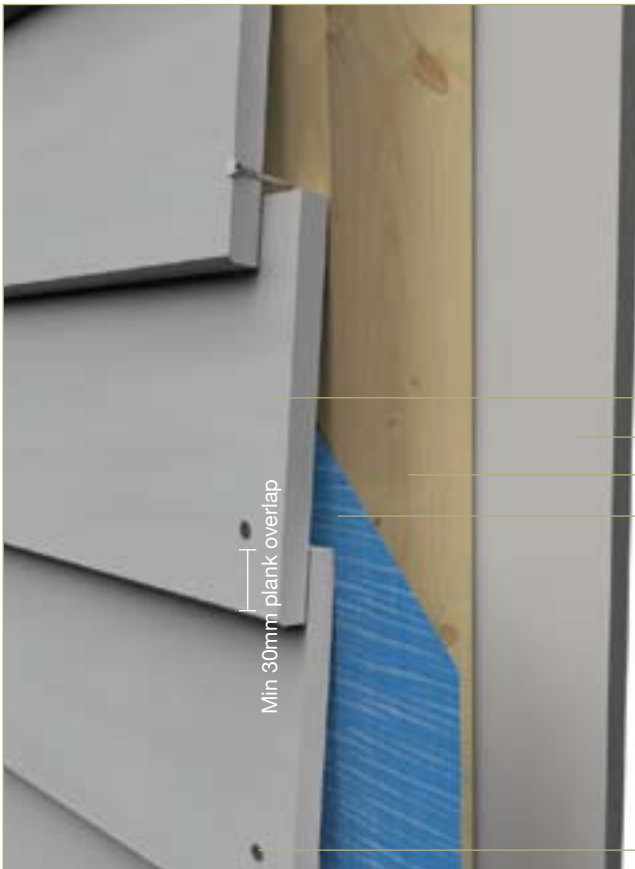
# INSTALLATION

FIGURE 5  
STARTER PLANK

- BGC Internal Liningboard
- BGC Nuline™
- Timber frame
- Vapour Permeable Sarking
- Damp Course
- Starter plank (Typical 100mm wide)



FIGURE 6A  
FASTENER DETAIL TIMBER FRAMING



- BGC Nuline™
- BGC Internal Liningboard
- Timber frame
- Vapour Permeable Sarking

Fasten through top weatherboard overlap + 5mm from plank edge.

60x2.8mm Galvanised Flat head nail

## INSTALLATION

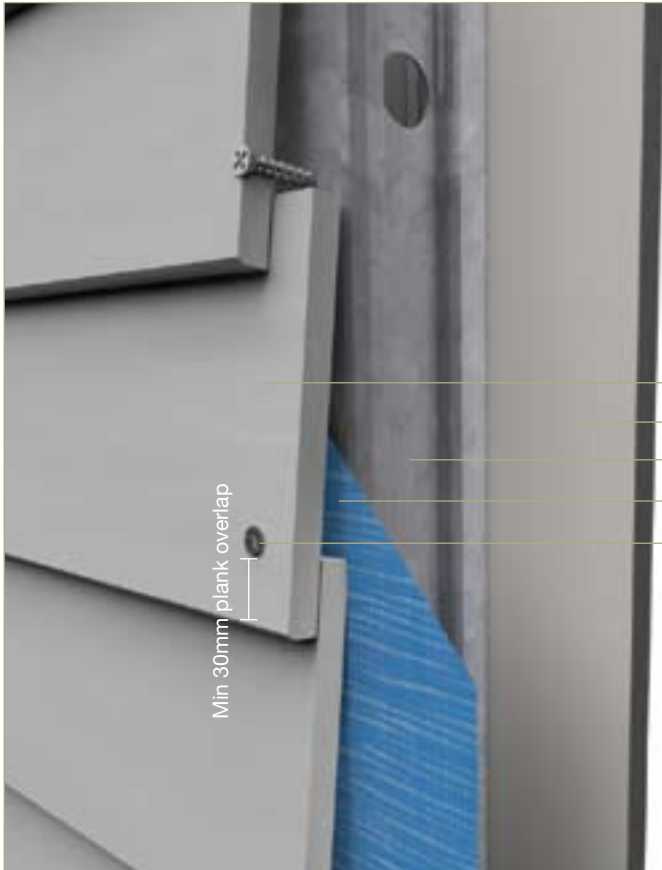


FIGURE 6B  
FASTENER DETAIL STEEL FRAMING

BGC Nuline™

BGC Internal Liningboard

Steel frame

Vapour Permeable Sarking

50mmxNo8 Self embedding head screw

Fasten screws through top weatherboard only. Overlap =5mm from plank edge



FIGURE 6C  
HALF HEIGHT TIMBER FRAME

BGC Nuline™

BGC Internal Liningboard

Selected Timber/Steel frame

Vapour Permeable Sarking

Starter strip

Daddo moulding (supplied by other)

Brickwork

## INSTALLATION

FIGURE 7A  
EXTERNAL CORNER DETAIL

**Notes:**

- / Secure the pre-formed aluminium corner moulding to corner stud prior to installing NuLine™ weatherboards.
- / Install NuLine™ weatherboard snug into aluminium corner, ensure bottom edge is covered by the moulding.
- / The plank end nails must not be driven closer than 50 mm to the plank end. For nails closer than 50 mm to the plank end pre-drill the plank.
- / The sketch depicts an external corner. The method for internal corners is identical except a pre-formed internal corner piece is used.

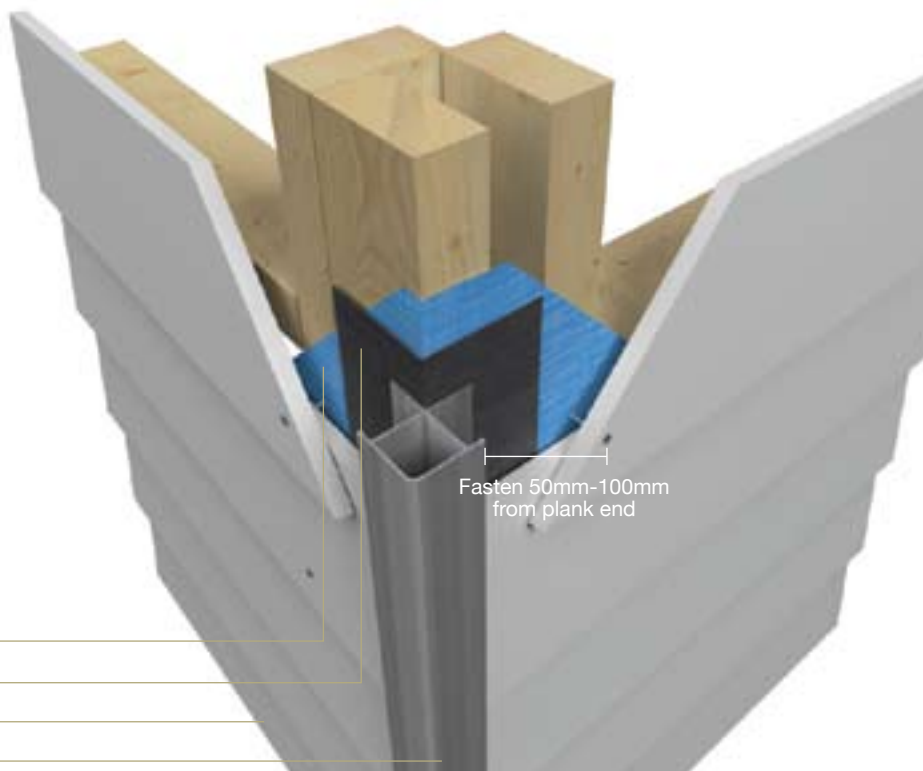
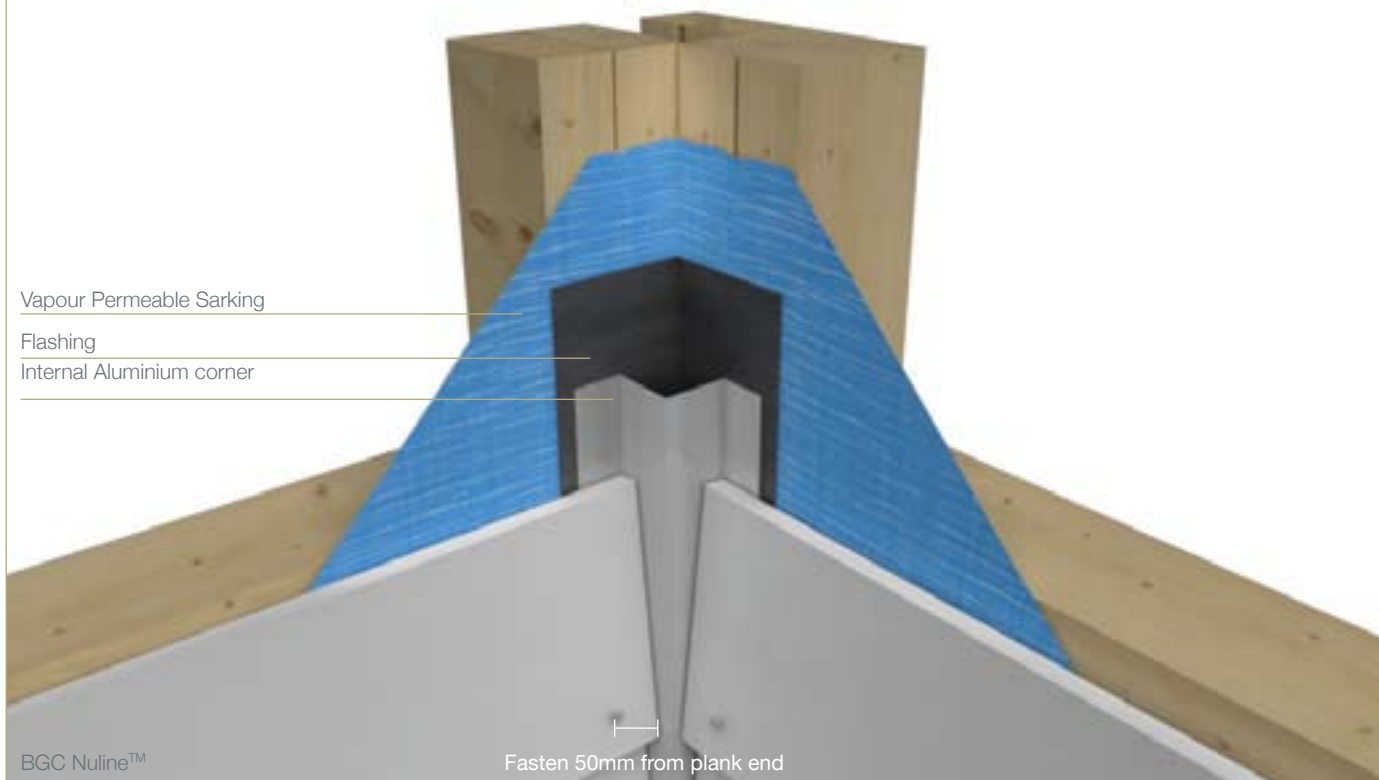


FIGURE 7B  
INTERNAL CORNER

- Vapour Permeable Sarking
- Flashing
- Internal Aluminium corner



## PLANK OVERLAPS

Planks must overlap the previous course by a minimum of 30 mm. Higher overlaps may be used to improve weather proofing (particularly when sarking is not used) or to match the wall height to the plank width. See Table on page 5.

## CUTTING AROUND OPENINGS

When cutting planks around window or door openings, a 5 mm nominal clearance must be provided at the jamb, head and sill.

Plank courses should be set out so that as near to a full plank width as possible remains under a window, or similar openings. See Figure 9.

A plank joint at one end for small openings and both ends of longer openings will make installation easier and eliminate breakages.

Flashing and mouldings must be installed as appropriate to prevent ingress of water into the framing.



## PAINTING

To enhance both the appearance and performance of NuLine™, BGC recommend that at least two coats of a 100% acrylic exterior grade paint be applied. The paint manufacturer's recommendation on application and maintenance of the paint system should be followed.

**Note:** BGC recommend the use of a roller or brush application for best results.

## MAINTENANCE

NuLine™ when used in accordance with this literature requires no direct maintenance.

To guard against water penetrating the structure and damaging the framework, annual inspections of the cladding system should be carried out. Check flashing, sealant joints and paint work.

Flashing and sealants must continue to perform their design function.

Damaged planks should be replaced as originally installed. Paintwork should be maintained in accordance with the manufacturer's instructions.

## INSULATION

NuLine™ cladding will require insulation to be installed in some regions that have thermal loss regulations.

Insulation should be installed in accordance with the manufacturer's instructions.

Insulation bats must fit snugly between framing members to minimise heat loss.

## FREEZE THAW

NuLine™ subject to freeze / thaw conditions must be painted.

NuLine™ should not be used in situations where it will be in direct contact with snow or ice for prolonged periods.

## THERMAL BRIDGING

Thermal breaks are required for steel framed buildings, in walls enclosing habitable and or useable spaces. Careful consideration of thermal heat transfer and the position of thermal breaks need to be addressed by the architects, engineers and building designers.

Balustrades, parapets, and other non-enclosing wall elements may not require thermal bridging, except where the possibility of high thermal heat transfer exists through the steel CFS sections to the main structural steel element of the building.

Thermal breaks should be installed between the NuLine™ weatherboards and the steel framing.

For further information refer to section 3.12.1.4 of the BCA. Thermal bridging is to be no less than R 0.2

## 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 products 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.

Fittings or accessories supplied by third parties is beyond the control of BGC and as such is not warranted by BGC.

## CONTACT

TO CONTACT  
YOUR NEAREST  
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02 9632 2100

**NEW ZEALAND**  
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0011 64 9264 1457

**BGC FIBRE CEMENT IS A  
PROUD AUSTRALIAN OWNED  
MANUFACTURER OF FIBRE  
CEMENT PRODUCTS.**

**BGC HAS STATE-OF-THE-ART  
MANUFACTURING FACILITIES  
IN PERTH AND DISTRIBUTION  
CENTRES IN ALL STATES OF  
AUSTRALIA & IN NEW ZEALAND.**

OUR DISTRIBUTION NETWORK ENSURES THAT OUR ENTIRE PRODUCT RANGE IS READILY AVAILABLE IN ALL STATES OF AUSTRALIA. BGC HAS A TEAM OF TECHNICAL SPECIALISTS WHO CAN ASSIST WITH ALL SPECIFICATION AND DESIGN INFORMATION. BGC PROVIDES BUILDERS, DEVELOPERS AND ARCHITECTS WITH A RANGE OF DESIGN ALTERNATIVES AND INNOVATIVE PRODUCTS.

**BGC FIBRE CEMENT PRODUCTS AND APPLICATIONS  
DISTRIBUTED BY BGC ARE:**

**CERAMIC TILE UNDERLAY** / A substrate for ceramic and slate floor tiles.

**COMPRESSED SHEET** / Used for domestic, commercial sheet for wet areas, flooring, partitions, external decking, fascia and facade cladding.

**DURACOM™** / Compressed fibre cement facade system

**DURALATTICE™** / Square or diamond patterned lattice, suitable for screens, pergolas and fences.

**DURALINER™** / An internal lining board, this is the perfect substrate for tiles and is ideal for wet areas.

**DURALUX™** / Internal lining board suitable for ceilings and soffits.

**DURASHEET™** / Used for external applications. Durasheet is ideal for the cladding of gables and lining eaves, carports and verandahs. Can also be used for commercial soffits and external cladding on non impact areas.

**DURAPLANK™** / Available in Smooth, Woodgrain and Rusticated finishes, Duraplank™ is ideal for external cladding of upper storey conversions or ground level extensions.

**DURATEX™** / A base sheet used for textured coatings on external wall applications.

**NULINE™** / Weatherboard cladding system.

**SILHOUETTE™** / A fibre cement plank and uPVC feature strip exterior cladding system.

**STONESHEET™** / Purpose designed substrate for stone tile facade.

**VINYL CORK FLOOR COVERINGS** / A substrate for vinyl floors.

**SAFE WORKING PRACTICES** / Please wear a P1 or P2 mask and safety goggles (approved to AS/NZW1337 standards) whilst cutting or installing NuLine™. NuLine™ sheets can be safely handled during unloading or stacking without the use of these precautions. **CLEANING UP** / Always wet down your work area when cutting NuLine™, to ensure that dust is managed. Dispose of any vacuumed dust with care and using containment procedures.

**BGC**

Fibre Cement



Quality  
Endorsed  
Company