



BGC NULINE™ PLUS IS A
WEATHERBOARD-STYLE CLADDING
SYSTEM. WITH ITS PERFECT JOIN
AND A SEDUCTIVE LOOK THAT
ECHOES REAL TIMBER, NULINE™
PLUS IS THE NATURAL EVOLUTION
OF THE EVER-POPULAR NULINE™
WEATHERBOARD.

THE NULINE™ PLUS TONGUE-&-GROOVE FITTING WILL DELIVER SEAMLESSLY CONSISTENT JOINS THROUGHOUT YOUR PROJECT. WITH ITS SLIGHT BEVEL ON THE REAR OF THE PLANK ALLOWING A 25MM BEARING FACE ON THE STUD, YOU'LL FIND FIXING AND NAILING EXCEPTIONALLY EASY.

THE NULINE™ PLUS WEATHERBOARD EXTERIOR CLADDING SYSTEM:

- / EXTEND YOUR OPTIONS WITH 2 DIFFERENT PROFILES: SQUARE & BULLNOSE
- / FACTORY SEALED, READY FOR PAINTING
- / QUICK, SIMPLE INSTALLATION: MANUAL NAILING, GUN NAILING OR SCREW FIXING
- / HIGHLY DURABLE: NO ROT OR DECAY
- / COMPLIES WITH BAL40 AS REQUIRED IN AS3959:2009 CONSTRUCTION OF BUILDINGS IN BUSHFIRE-PRONE AREAS





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PRODUCT DESCRIPTION

Nuline[™] Plus is an evolution on the original Nuline[™] product which has been on the market for many years. Nuline[™] Plus has enhanced features which ensure that your project is completed with as much ease and perfection as possible.

Nuline™ Plus features a tongue and groove joining system. The tongue and groove method of joining ensures that a more consistent joint is achieved and gives enhanced weather proofing.

Another feature on Nuline™ Plus is the bevel on the top edge on the back of each plank. This bevel allows the weatherboard to have a 25mm bearing face on the stud giving superior fixing and nailing.

Nuline™ Plus 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.

ADVANTAGES

- / Tongue and groove joining gives consistent joints
- / Superior fixing and nailing due to bevel on back of weatherboard
- / Quick and easy to cut, handle and install
- / Acrylic sealed, ready for painting
- / Durable and low maintenance
- / Can be joined off stud

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.

PRODUCT INFORMATION

Nuline™ Plus 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™ Plus 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.

These tests deemed the following Early Fire Hazard Indices:

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

PLANK SIZES & MASS

Nuline $^{\text{TM}}$ Plus weatherboard planks are available in the following.			
THICKNESS mm	MASS I/m	WIDTH mm	LENGTH mm
14	3.5	175	4200
14	4.2	205	4200

Sizes available in Square and Bullnose profiles. Weights are based on Equilibrium Moisture Content.

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







HEALTH & SAFETY

Nuline™ Plus 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.bgcinnovadesign.com.au

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.

NO. OF PLANKS	PLANK SIZE 4200 x 175 PLANK OVERLAP 30MM EFFECTIVE COVER PER PLANK 4200 x 145MM OR 0.609M ²	PLANK SIZE 4200 x 205 PLANK OVERLAP 30MM EFFECTIVE COVER PER PLANK 4200 x 175MM OR 0.735M ²
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 & DRILLING

Nuline™ Plus weatherboards 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.



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™ Plus weatherboards 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 exterior 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	3000mm	BGC PRODUCT CODE INTCNR36	
EXTERNAL ALUMINIUM CORNER	3000mm	BGC PRODUCT CODE EXTCNR36	
INTERNAL OBTUSE ANGLE	2700mm	BGC PRODUCT CODE 815	
EXTERNAL OBTUSE ANGLE	2700mm	BGC PRODUCT CODE 820	The state of the s
J MOULD	2700mm	BGC PRODUCT CODE 805	
STARTER STRIP	2700mm	BGC PRODUCT CODE 825	

FASTENERS

Nuline™ Plus must be fastened at every stud. Nails must not be driven closer than 50mm from the plank end. Nails or fasteners can be located 20mm minimum from the plank end if the fastener hole is predrilled. Fasteners must not be placed closer than 12mm from the plank edge.

NULINE™ PLUS TO STEEL FRAME

No. 8 x 40mm Galvanised Self Embedding Head Screws Class 3





NULINE™ PLUS TO TIMBER FRAME

FACE FIXING

No. 65 x 2.8mm Galvanised Flat Head Nails Class 3



No.60 x 3.15mm Galvanised Flat Head Nail Class 3



CONCEALED FIXING

No. 50 x 2.8mm Galvanised Flat Head Nail Class 3 at every stud



CONCEALED FIXING IN BUSHFIRE/COASTAL AREAS

Where Nuline™ Plus is being fixed in a bushfire/coastal area a 60mm bullet head nail should be applied at every 3rd or 4th stud 35mm from the bottom of the plank. Nuline™ Plus will need to be pre drilled and nailed, filled with Megapoxy and topped with Exterior Top Coat.

Please note that Australian Standard AS3959:2009 states that no gaps greater that 3mm are permitted when planks are being installed into bushfire prone areas.

PRE COUNTERSINK

When using screws to fasten Nuline™Plus, pre countersinking is suggested so that the fastener is 2mm under the plank surface for filling with epoxy filler and BGC Exterior Finishing Compounds.



- / For renovation projects where the original cladding is not removed, longer nails will be required.
- Nails must be driven a minimum of 30mm into the frame.
- 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.





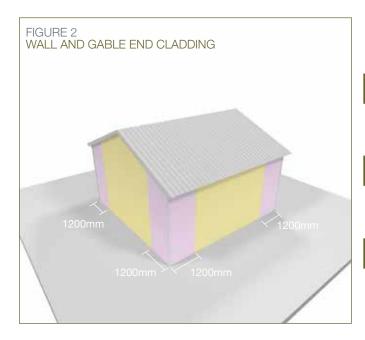
CONSTRUCTION DETAILS

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 NulineTM Plus for various wind classifications, are presented in Figure 2.

Nuline $^{\text{TM}}$ Plus is suitable for installation on either timber or lightweight steel framing.



TIMBER FRAMING

Timber framing must be dry prior to fixing Nuline™ Plus. 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

NulineTM Plus 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™ Plus weatherboards.

TIMBER BATTENS

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

STEEL BATTENS

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

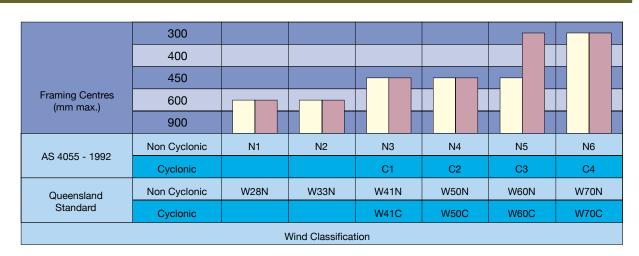
JOINING

Nuline $^{\text{TM}}$ Plus has a tongue and groove end joining system and is designed for off stud joining – refer to Figure 4.

It is recommended that the joins be staggered and centrally located between studs but should not be closer than 100mm from the studs.

A bead of sealant should be applied to the back of the joint as per Figure 5.

FRAMING CENTRES





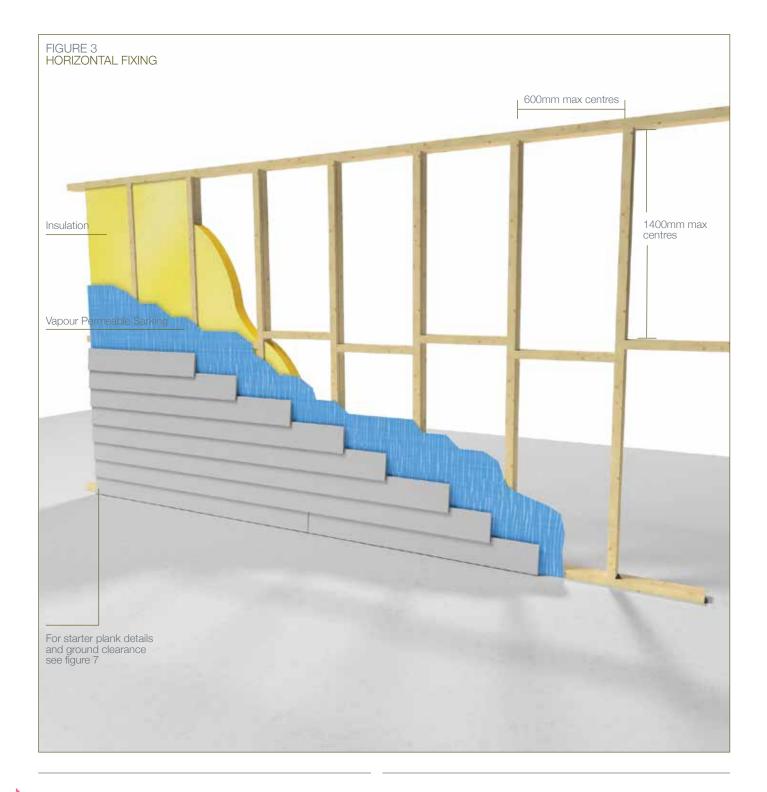
GENERAL

Figure 3 depicts the general framing requirements for Nuline $^{\rm TM}$ Plus installed horizontally.

SARKING

The installation of a Vapour Permeable Sarking between Nuine $^{\rm TM}$ Plus 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.

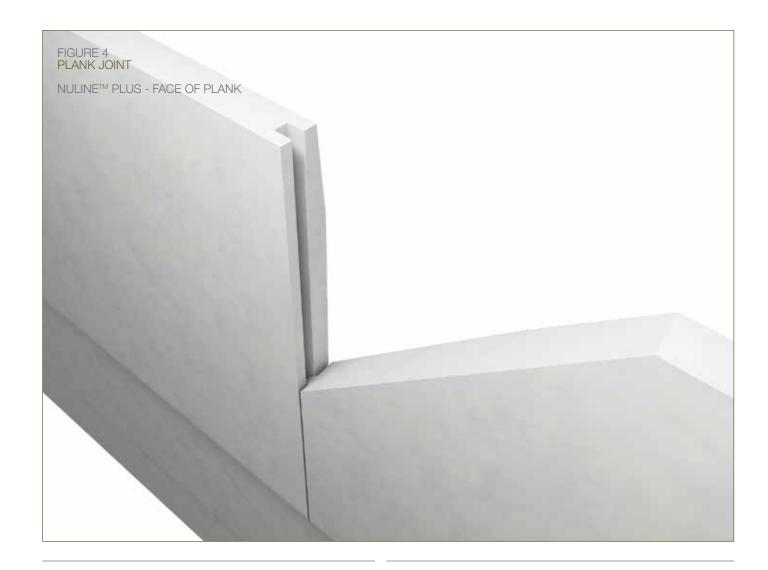






- / Calculate the number of Nuline™ Plus weatherboards required using the Plank Course Ready Reckoner as detailed in Table 1, on page 6.
- / Fix all flashings to wall openings and external and internal corners. See figures 12 and 13 for corner details using BGC Aluminium Angles.
- / Fix a BGC Starter Strip (Metal) to the bottom plate to ensure the first row of Nuline™ Plus weatherboards are packed out to the correct angle. This starter strip is to be continuous around the perimeters of the building. See figure 10 for this detail.
- / Alternatively, fix a starter strip (timber or a strip of plank) to the bottom plate to ensure the first row of Nuline™ Plus 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 7 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™ Plus weatherboards.

- / 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.
- Install extruded aluminium corners, before nailing home the corner fixing. See figures 12 and 13 for these details.
- / 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.



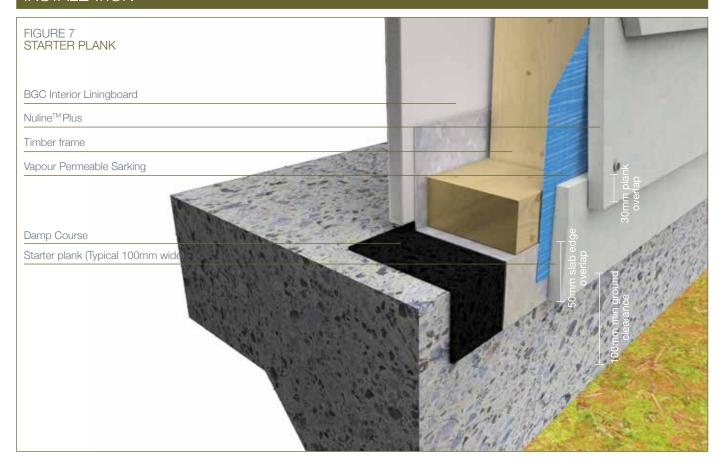


















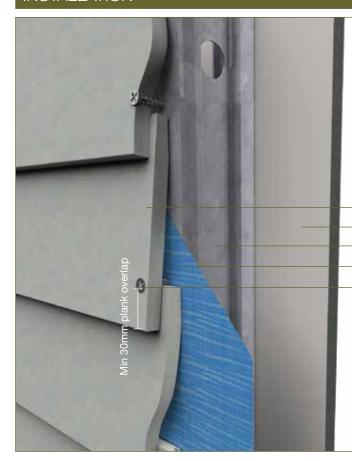


FIGURE 9 FASTENER DETAIL STEEL FRAMING FACE FIXING SYSTEM

Nuline™ Plus

BGC Interior Liningboard

Steel frame
Vapour Permeable Sarking

50mm x No8 Self Embedding Head Screw

Fasten screws 35mm from bottom edge of plank





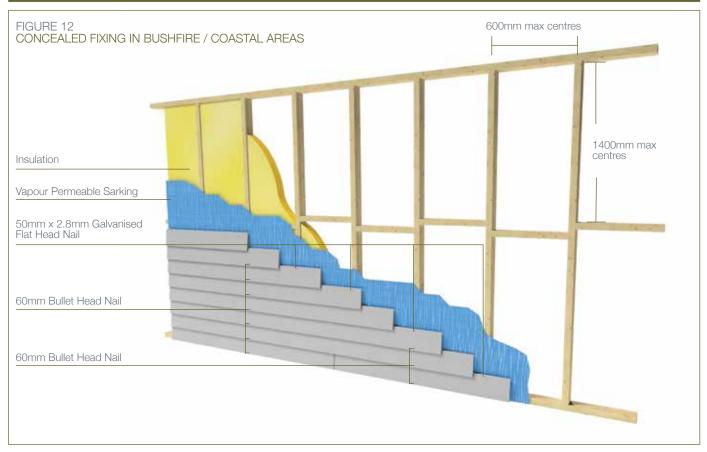


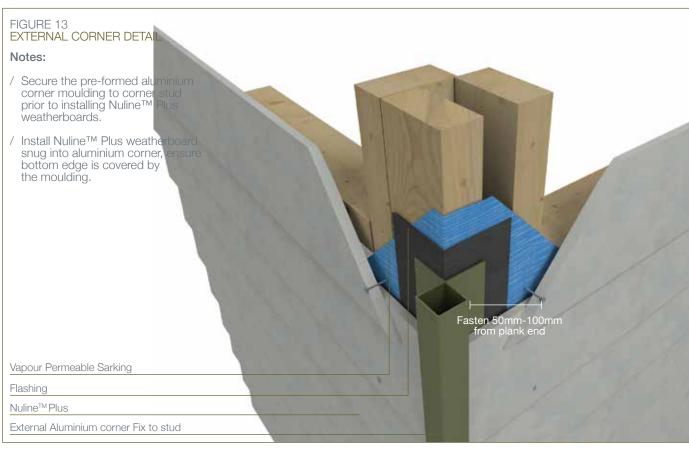






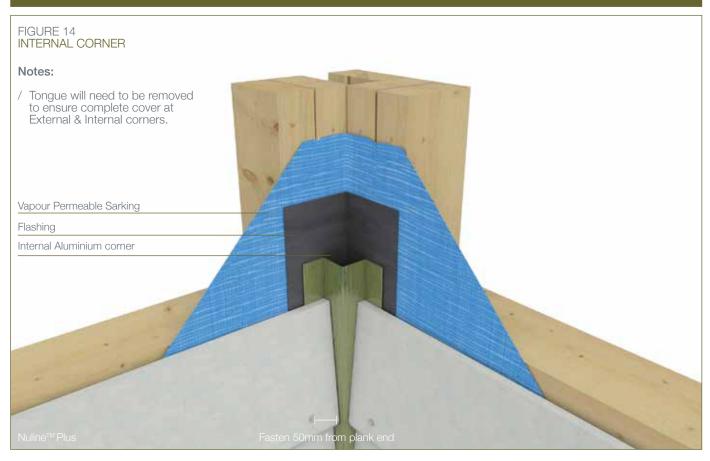


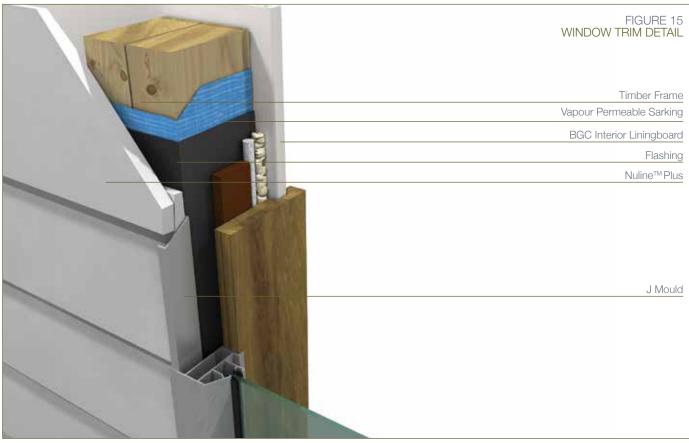
















PLANK OVERLAPS

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 6.

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. Under a window, keep as near to a full plank width as practical.

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

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





PAINTING

To enhance both the appearance and performance of Nuline™ Plus, 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.

It is recommended that NulineTM Plus weatherboards are painted according to the paint manufacturer's instructions within three months following delivery to site.

Should NulineTM Plus weatherboards be exposed to the elements for a period beyond the initial three months to achieve an optimum finish an additional priming coat is recommended prior to the top finishing coats being applied.

Ensure that the Nuline™ Plus weatherboards are dry and clean prior to applying a quality exterior paint system.

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

MAINTENANCE

Nuline $^{\text{TM}}$ Plus 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™ Plus 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 batt's must fit snugly between framing members to minimise heat loss.

FREEZE THAW

Nuline™ Plus conforms to the Building Code of Australia (BCA) requirements for external wall applications. Nuline™ Plus weatherboards been tested to AS/NZS 4284 Testing of Building Facades.

NulineTM Plus subject to freeze/thaw conditions must be painted. NulineTM Plus should not be used in situations where it will be in direct contact with snow or ice for prolonged periods.

MOISTURE MANAGEMENT

Designers, specifiers and builders have a duty of care to identify moisture-associated risks with any individual building design.

Wall construction design should consider both the interior and exterior environments of the building to effectively manage moisture.

Special consideration should be given to buildings that are in extreme climates or at higher risk of wind driven rain.

In addition, all wall openings, penetrations, junctions, connections, window heads, sills and jambs must incorporate appropriate flashing for waterproofing. All other components, materials and installation methods used to manage moisture in walls should comply with the relevant standards of the Building Code of Australia (BCA).

WARRANTY

We warrant that our products are free from defects caused by faulty manufacture or materials for a period of 15 years from the date of purchase. If you acquire any defective products, we will repair or replace them, supply equivalent replacement products or refund the purchase price within 30 days of receiving a valid claim subject to product inspection and confirmation of the existence of a defect by BGC. We will bear the cost of any such repair, replacement or refund.

This warranty is given by:

BGC Fibre Cement Pty Ltd 121 Bannister Rd Canningvale WA 6155 Phone 08 9334 4900 Fax 08 9334 4749

To claim under this warranty, you must provide proof of purchase as a consumer and make a written claim (including any costs of claiming) to us at the address specified above within 30 days after the defect was reasonably apparent, or if the defect was reasonably apparent prior to installation, the claim must be made prior to installation. You may not claim under this warranty for loss or damage caused by:

- faulty or incorrect installation by non-BGC installers (BGC's installation procedures are at bgcinnovadesign.com.au);
- failure to comply with the Building Code of Australia or any applicable legislation, regulations approvals and standards:
- products not made or supplied by BGC;
- abnormal use of the product; or
- normal wear and tear.

The benefits available under this warranty are in addition to other rights and remedies of the consumer under the law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.





THERMAL BREAKS

Thermal breaks are required for steel framed buildings, in walls enclosing habitable and or usable 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.

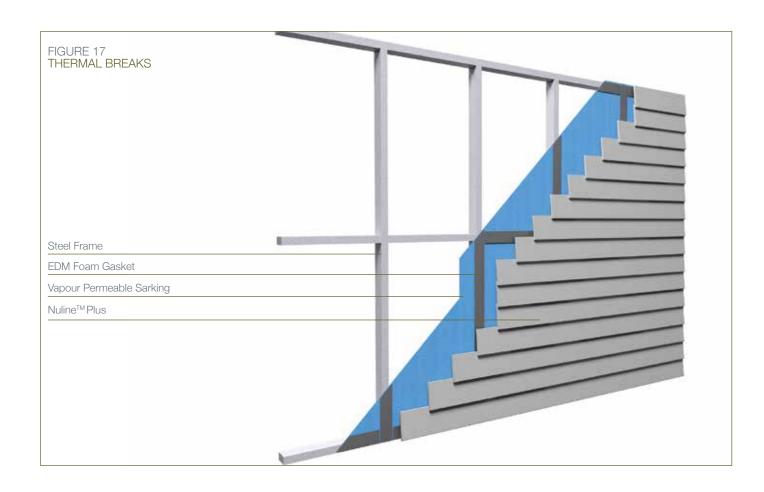
As part of the BGC Fibre Cement range EPDM Foam Gasket is able to act as a thermal break and is required to prevent moisture ingress at sheet joins. EPDM Foam Gasket can also be used as a Thermal Break Tape and provides an R value of R 0.2 in accordance with the Building Code of Australia.

The EPDM Foam Gasket should be placed on all frame contact faces and at noggins and bottom plates.

Thermal breaks are first installed to all vertical frame members (Studs) then applied horizontally to top and bottom tracks as well as any horizontal noggins.

NOTE // Thermal breaks (BGC EPDM Foam Gasket) is a self adhesive foam gasket/tape. It is installed over the building wrap (sarking)

Leave a small gap between the vertical gasket to allow any moisture to escape.





BUSHFIRE & BOUNDARY WALL AREAS

Nuline™ Plus is eminently suited for both bushfire and boundary wall applications in residential and multi residential buildings.

Nuline[™] Plus can be used as a stand alone product to achieve up to BAL 40 when fixed direct to frame as per the fixing instructions in this manual.

Nuline™ Plus when used in conjunction with BGC 16mm Wet Area Fireboard will comply with the requirements of AS3959:2009 and AS1530.4 to achieve BAL FZ>10 as well as 60 minute and 90 minute boundary wall systems.

BUSHFIRE AS3959:2009 APPLICATIONS

AS3959:2009 sets out a series of Bushfire threat levels to buildings described as BAL (Bushfire Attack Levels) as follows: BAL-Low, BAL-12.5, BAL-19, BAL-29, BAL-40 or BAL-FZ (Flamezone).

Nuline™ Plus may be used to achieve a BAL-40 on its own or BAL-FZ>10 when used in conjunction with 16mm Wet Area Fireboard.

BOUNDARY/EXTERIOR WALLS

Nuline™ Plus in conjunction with BGC 16mm Wet Area Fireboard can achieve both 60/60/60 and 90/90/90 FRL fire ratings from the outside as required by the BCA.

Where an exterior wall is required to achieve 60/60/60 FRL (Fire Resistance Level) from the outside, 1 layer of 16mm BGC Wet Area Fireboard installed with Nuline™ Plus over the Wet Area Fireboard will meet minimum BCA requirements. Similarly 2 layers of 16mm BGC Wet Area Fireboard used in conjunction with Nuline™ Plus will achieve 90/90/90 from the outside.

NOTE: All exterior walls must have sarking beneath the Nuline™ Plus. No adhesives are to be used when installing Wet Area Fireboard and the Nuline™ Plus. Nails or screws must be used.

For more information please contact your nearest BGC Fibre Cement office or download the BGC Fire and Acoustic Guide from www.bgcinnovadesign.com.au





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TO CONTACT YOUR NEAREST BGC STOCKIST, PLEASE CALL:

ADELAIDE TELEPHONE 08 8250 4962

BRISBANE TELEPHONE 07 3271 1711

MELBOURNE TELEPHONE 03 9392 9444

PERTH TELEPHONE 08 9334 4900

SYDNEY TELEPHONE 02 9771 9660

NEW ZEALAND TELEPHONE 0011 64 9264 1457

TECHNICAL HELP LINE 1300 652 242



Fibre Cement



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

BGC FIBRE CEMENT PROVIDES BUILDERS, DEVELOPERS AND ARCHITECTS WITH A RANGE OF DESIGN ALTERNATIVES AND INNOVATIVE PRODUCTS, SUCH AS:

EXTERIOR PRODUCTS AND APPLICATIONS INNOVA RANGE OF PRODUCTS

DURACOM™ / A compressed fibre cement facade system.

DURAFLOOR™ / Is the ultimate flooring product that can be used in both interior and exterior applications.

DURAGRID™ RESIDENTIAL & DURAGRID™ LIGHT COMMERCIAL. A light weight facade giving a modern and durable finish.

DURAGROOVE™ / A vertically grooved exterior facade panel.

DURASCAPE™ / A lightweight exterior facade base sheet with a subtle vertical shadow line.

NULINE™ PLUS / A weatherboard style cladding system.

STONESHEET™ / Purpose designed substrate for stone tile facade.

STRATUM™ / Is a trio of plank products, each of which can be used as stand alone products or used together to create a striking exterior cladding solution.

EXTERIOR PRODUCTS AND APPLICATIONS BGC FIBRE CEMENT RANGE OF PRODUCTS

DURASHEET™ / Ideal for the cladding of gables and lining of eaves. Can also be used on commercial soffits and cladding on non impact areas.

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

DURATEXTM / A base sheet used for textured coatings on exterior wall applications.

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

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

DURALUX™ PLUS / Suitable for exterior applications where it will be sheltered from direct weather.

INTERIOR PRODUCTS AND APPLICATIONS BGC FIBRE CEMENT RANGE OF PRODUCTS

DURALUX™ PLUS / An interior lining board suitable for ceilings and soffits.

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

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

VINYL CORK FLOOR COVERINGS / A substrate for vinyl floors.