



NULINE™ PLUS IS A WEATHER-BOARD STYLE CLADDING SYSTEM THAT LOOKS LIKE REAL TIMBER. NULINE™ PLUS IS AN EVOLUTION FROM THE POPULAR NULINE™ WEATHERBOARDS.

THE NULINE™ PLUS WEATHERBOARD EXTERIOR CLADDING SYSTEM:

- / JOINS USING A TONGUE AND GROOVE SYSTEM GIVING A CONSISTENT AND SEAMLESS JOINT THROUGHOUT THE PROJECT
- / FEATURES A SLIGHT BEVEL ON THE BACK
 OF THE PLANK ALLOWING A 25MM BEARING
 FACE ON THE STUD GIVING SUPERIOR FIXING
 AND NAILING
- / FACTORY SEALED AND PRIMED, READY FOR PAINTING
- / QUICK AND SIMPLE TO INSTALL USING MANUAL NAILING, GUN NAILING OR SCREW FIXING
- / WILL NOT ROT OR DECAY AND IS HIGHLY DURABLE
- / BRANZ APPRAISED NO 640 AND 641 (2015)







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.

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

NulineTM Plus is not subject to timber rot or decay 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 and primed, ready for painting
- / Durable and low maintenance
- / Nuline™ Plus has been Appraised by BRANZ for both Direct fixed and Cavity construction – Appraisal 640 and 641 (2015). For copies of the BRANZ Appraisals please contact BGC Fibre Cement (NZ), www.bgcinnovadesign.co.nz or www.branz.co.nz.

ENERGY EFFICIENCY CONSIDERATIONS

Energy Efficiency requirements for both residential and commercial buildings are a requirement under clause H1 of the New Zealand Building Code (NZBC). Thermal heat transfer into and out of the building envelope will affect 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. Guidance on insulation requirements can be found in the latest edition of BRANZ publication – 'House Insulation Guide'.

PRODUCT INFORMATION

Nuline™ Plus is 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 is manufactured to conform to the requirements of AS2908.2 Cellulose-Cement Products and are classified as Type A Category 3 for external use.

CONTROL OF EXTERNAL FIRE SPREAD

Nuline™ Plus weatherboard has a peak heat release rate of less than 100kW/m² and a total heat released of less than 25MJ/m². In accordance with NZBC Acceptable Solution C/AS1 Table 5.1 the system is suitable for use on buildings with a SH Risk Group classification, at any distance to the relevant boundary. Refer to NZBC Acceptable Solutions C/AS2 – C/AS6 Paragraph 5.8.1 for the specific exterior surface finishes requirements for other building Risk Groups.

PREVENTION OF FIRE OCCURRING

Separation or protection must be provided to the Nuline™ Plus weatherboard cladding system from heat sources such as fire places, heating appliances, flues and chimneys. Part 7 of the NZBA Acceptable Solutions C/AS1 – C/AS6 and NZBC Verification Method C/VM1 provide methods for separation and protection of combustible material from heat sources.

FIRE RESISTANCE RATING

30 Minute FRR is achieved when Nuline™ Plus is installed a sper the below for either direct fixed or cavity construction. Fixed as per details contained within this brochure.

Timber Framing: Minimum 90mm x 45mm framing in accordance with NZS3604. Studs at maximum 600mm centres. Noggins at maximum 800mm centres. Double or staggered studs may be used.

Interior lining: 10mm or 13mm GIB® Fyreline fixed as per Winstone Wallboards Ltd specification GBTL 30 system from GIB® Fire Rated Systems October 2012.

Insulation: Any R2.2 nominal 95mm thickness fibre glass insulation.

PLANK SIZES AND MASS

$Nuline^{TM}$ $Plus$ is available in the following.			
THICKNESS mm	MASS kg/m	WIDTH mm	LENGTH mm
4.4	3.54	150 Smooth	4200
14	4.13	175 Smooth	4200
	4.83	205 Smooth	4200

PLANK TOLERANCES

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

PROFILE







ARCHITECTURAL DETAILS

Full architectural details are available from BGC Fibre Cement, www.bgc.com.au/fibrecement or on Productspec and full specification is available on Smartspec.

DESIGN CONSIDERATIONS

The designer should determine the wind pressures for the project and design accordingly.

Nuline™ Plus can be situated in specific design wind pressures up to a maximum design differential ultimate limit state (ULS) of 2.5kPa when used over a drained cavity.

HEALTH AND SAFETY

NulineTM 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.bgc.com.au/fibrecement

HANDLING AND STORAGE

Nuline™ Plus 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

As per the requirements of NZS3604 Stainless Steel (min 304) fixings and corner soakers must be used in the Seaspray Zone.

CUTTING AND DRILLING

Nuline™ Plus 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. Also available in 250mm and 300mm.



/ 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.



ACCESSORIES AVAILABLE FROM BGC

INTERNAL ALUMINIUM CORNER (ALSO AVAILABLE IN 135°)	3000mm	
EXTERNAL ALUMINIUM CORNER	3000mm	
VENT STRIP	2700mm	
EXTERNAL CORNER SOAKERS (ALSO AVAILABLE IN 135°)	/150mm/175mm/205mm	
BGC EDGE SEALER		fidge Sealer
PRECUT SCRIBERS	/150mm/175mm/205mm 40 x 18 x 5400mm	

ACCESSORIES SUPPLIED BY BUILDING MERCHANT

CAVITY TIMBER BATTEN H3.1	20 x 50mm	
CAVIBAT CAVITY BATTEN	20 x 45mm	And the second s
ADHESIVE SEALANT	Bostik Seal 'n' Flex FC or similar BRANZ Appraised adhesive sealant	
SEALANT	Bostik Safetech Safe Seal or any BRANZ Appraised paintable sealant	
TIMBER BOX CORNERS, FACING AND SILLS		





FASTENERS

We recommend that Nuline™ Plus is installed with the face nailing method ie nailed either 20mm (through both planks) or 35mm (though top plank only) from the bottom of the plank. The face nail will need to be predrilled with a 3mm hole prior to nailing.

Nuline™ Plus can be tacked in place with a concealed nail and the exposed nail installed when wall or area is fully installed.

Fasteners must not be placed closer than 20mm from the plank edge or 50mm from the plank ends (this can be reduced to 20mm with predrilling).

NulineTM Plus can be installed either Direct Fixed or on a cavity refer to Direct Fixed or Cavity Construction section.

When installed on a cavity, Nuline™ Plus can be fixed 2 ways either on non-structural cavity battens or on structurally cavity battens - see table below for the correct fixing types.

Nuline $^{\text{TM}}$ Plus must be fixed at max. 800mm centres to the studs or cavity battens.

TABLE 1: FIXING OPTIONS – NULINE™ PLUS CAVITY CLADDING SYSTEM*

BATTEN TYPE	BATTEN FIXINGS	CONCEALED BOARD FIXING (TOP)	FACE NAIL FIXING (BOTTOM)
STRUCTURAL CAVITY BATTENS	65 x 2.87 mm Paslode RounDrive ring-shank galvanised nails or 60 x 2.8 mm hot-dip galvanised jolt-head nails	50 x 2.87 mm Paslode hot-dip galvanised ring-shank D-head gun nails or 50 x 2.8 mm hot-dip galvanised or stainless steel ring-shank, flat-head nails	60 x 3.15 mm hot-dip galvanised or stainless steel ring-shank, jolt-head nails
NON - STRUCTURAL CAVITY BATTENS	**40 x 2.8 mm hot-dip galvanised flat-head nails	65 x 2.87 mm Paslode hot-dip galvanised ring-shank D-head gun nails or 60 x 2.8 mm hot-dip galvanised or stainless steel ring-shank, flat-head nails	75 x 3.15 mm hot-dip galvanised or stainless steel ring-shank, jolt-head nails

^{*} Suitable for differential wind pressures up to 2.5kPa

TABLE 2: FIXING OPTIONS - NULINE™ PLUS DIRECT FIXED CLADDING SYSTEM*

CONCEALED BOARD	FACE NAIL
FIXING (TOP)	FIXING (BOTTOM)
50 x 2.87 mm Paslode hot-dip galvanised ring-shank D-head gun nails or 50 x 2.8 mm hot-dip galvanised or stainless steel ring-shank, flat-head nails	60 x 3.15 mm hot-dip galvanised or stainless steel ring-shank, jolt-head nails

^{*} Note: Direct fixed cladding limited to Very High Wind Zone





^{**} There is no specific nail size specified in E2/AS1 for fixing non-structural cavity battens to the framing. This nail size is suggested to temporarily fix the batten in position until the cladding is fixed.

CONSTRUCTION DETAILS

FRAMING

Timber wall framing behind the Nuline™ Plus cavity system must be treated as required by NZBC Acceptable Solution B2/AS1. Timber Framing must comply with NZS3604 for buildings within the scope of NZS3604. Building outside the scope of NZS3604 must be a specific design in accordance with NZS3603 and AS/NZS 1170

TIMBER FRAMING SET OUT

In all cases studs must be at maximum 600mm centres. Dwangs/Nogs must be fitted flush between the studs at maximum 800mm centres.

Timber wall framing and cavity battens must have maximum moisture content of 24% before Nuline™ Plus is installed and 18% before painting.

DIRECT FIXED OR CAVITY CONSTRUCTION

For Buildings with a risk score of 12 or less (as per NZBC Acceptable Solution E2/AS1 − Tables 2 and 3) Nuline™ Plus can be direct fixed.

For Buildings with a risk score of greater than 12 (as per NZBC Acceptable Solution E2/AS1 – Tables 2 and 3) Nuline™ Plus will need to be constructed on a 20mm drained cavity.

WALL UNDERLAY

A BRANZ appraised Flexible wall underlay must be installed as per manufacturer's installation instructions and E2/AS1. Refer to E2/AS1 for the correct type of wall underlay to suit the application.

For construction in the Extra High wind zone and specifically designed buildings up to a 2.5kPa design differential ULS wind pressure a Rigid Sheathing/Air Barrier must be installed − ie BGC Durabarrier™.

Unlined gables and walls must incorporate a rigid sheathing/ air barrier ie BGC Durabarrier™ – refer to the BGC Durabarrier™ brochure for installation instruction.

FLASHINGS

Flashings for all openings, corners, windows, meter boxes etc must be installed prior to the fixing of Nuline™ Plus. Refer to the Architectural details for recommended flashings. Also refer to E2/AS1 Tables 20-22 for flashing material selection and compatibility.

BGC will not be responsible for the incorrect selection and installation of flashing.

VENT STRIP

For Cavity Construction, a BGC Vent Strip or a Weather Board Starter/Cavity Closer (30 or 35mm) manufactured by Redway Developments is required to be installed. The Weather Board Starter/Cavity Closer eliminates the need for a cant strip to be installed at the base of the wall. The BGC Vent Strips or Weather Board Starter/Cavity Closer is available from your building merchants.

CAVITY BATTENS

As per E2/AS1 Cavity Battens must:

- / Be nominal 20mm (between limits of 18mm and 25mm in thickness)
- / Be at least the same width as the stud
- / Be fixed by, the cladding fixings, through the building underlay in to the framing. Battens can be temporarily fixed to the studs until the Nuline™ Plus is installed
- / Comply with the durability requirements of B2/AS1 and if timber comply with NZS3602.
- Cavity Batten's must be minimum of H3.1
- Cavibat system can also be used

FLEXIBLE WALL UNDERLAY SUPPORT

When stud spacings are greater than 450mm and a flexible wall underlay is used then support must be used to secure the flexible wall underlay in place and prevent bulging of the bulk insulation in the drained cavity.

This can be achieved with:

- / An additional vertical batten
- / Polypropylene Strap at 300mm centres horizontally
- / Galvanised Wire at 300mm centres horizontally
- / 75mm Galvanised Mesh

JOINING

Nuline[™] Plus has a tongue and groove end joining system and is designed for off stud joining – refer to Figure 3.

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 BRANZ Appraised Adhesive/Sealant should be applied to the back of the joint as per Figure 6.

PLANK OVERLAP

Planks must overlap the previous course by a minimum of 30mm. Higher overlaps may be used to line courses up with windows and/or doors or due to overall height of wall.

PAINTING AND PREPARATION

Painting of Nuline[™] Plus is required to meet the durability and external moisture requirements of the NZBC. Nuline[™] Plus must be painted within 3 months of installation. There is no restriction on the colour Nuline[™] Plus can be painted.

All face nails must be punched 2mm below the surface and filled with appropriate exterior grade filler.

Once cured, it needs to be sanded smooth.

The filled nail holes will need to be spot primed if not fully priming Nuline $^{\text{TM}}$ Plus.

Nuline[™] Plus must be finished with a latex exterior paint system complying with any of part 7, 8, 9 or 10 of AS3730. All cut edges must be sealed with BGC Edge Sealer or similar prior to fixing.

NulineTM Plus is supplied pre-primed, for the best finish BGC recommends following paint manufacturer's recommendations on application and maintenance of the paint system.

Follow the manufacturer's instructions regarding the installation of the sealant.



MAINTENANCE

Building owners are responsible for the maintenance of NulineTM Plus. Annual inspections must be made to ensure that all aspects of the cladding systems, including flashings remain in a weatherproof condition. Any damaged areas or areas showing signs of deterioration which would allow water ingress, must be repaired immediately. Sealant, paint coatings, flashings or the NulineTM Plus must be repaired in accordance with the relevant manufacturer's instructions.

Regular cleaning (at least annually) of the paint finish with water and a mild detergent is recommended to remove grime, dirt and organic growth, to maximise the life and appearance of the cladding.

Recoating of the paint finish will be necessary throughout the life of the cladding system. Re-painting must be carried out every 5-10 years in accordance with the paint manufacturer's instructions. When re-painting, care must be taken to ensure bottom edges are well covered with the paint. 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.

FREEZE THAW

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

WARRANTY

BGC Fibre Cement (NZ) warrants its products to be free from defects caused by defective materials or workmanship (manufacturer) for a period of 25 years from the date of purchase, subject to the conditions set out below. Further, BGC Fibre Cement (NZ) warrants its products to be resistant from rotting, fire and cracking so long as the installation is carried out in accordance with BGC Fibre Cement literature available at the time of purchase.

CONDITIONS

- i) This warranty is non transferable
- ii) The product must be installed and maintained in accordance with the relevant BGC Fibre Cement (NZ) literature current and available at the time of purchase. All additional products including accessories, jointing systems and coatings used in conjunction with the BGC Fibre Cement product(s) must be applied or installed according to the appropriate manufacturer's instructions.
- iii) BGC Fibre Cement (NZ) is not liable for any breach of warranty unless the claimant provides proof of purchase and a claim is submitted in writing within 30 days of the defect becoming evident. If the defect is detected prior to installation, the claim must be submitted before installation occurs. iv) If BGC Fibre Cement (NZ) products are found to be defective, BGC Fibre Cement will at its option, repair or replace the product, supply equivalent replacement products or reimburse the purchase price of the product.

WARRANTY CONT.

v) BGC Fibre Cement (NZ) shall not be liable for any damage or losses (direct or indirect) including property damage or personal injury, economic loss or loss of profits, consequential loss arising in contract or negligence or howsoever arising. BGC Fibre Cement (NZ) shall not be liable for any claims, damages or defects arising from or attributed to poor workmanship, poor design or detailing, settlement or structural movement or movement of materials to which the product is attached, incorrect design of the structure, acts of God, including but not limited to floods, cyclones, earthquakes or severe weather or unusual climate conditions, performance of coatings or paints applied to the product, normal wear and tear, growth of mould, mildew, fungi, bacteria or any other organism on the products surface (exposed or unexposed).

vi) The project must be designed and constructed in accordance with all relevant requirements of the current New Zealand Building Code regulations and standards.

vii) If satisfying a claim under this warranty which involves recoating or painting of BGC Fibre Cement (NZ) products, there may be slight colour differences between the replacement product and the original products due to the effect weathering and variations in materials over time.

viii) All warranties, conditions, liabilities and obligations other than those specified in this warranty are excluded to the fullest extend allowed by the law.

DISCLAIMER

The successful performance of the relevant product depends on a number of factors outside the control of BGC Fibre Cement (NZ). As such, BGC Fibre Cement (NZ) shall not be liable for the recommendations made in its literature and the performance of the products/systems including its suitability for any purpose or ability to comply with the relevant conditions set out in the New Zealand Building Code. It is the responsibility of the building designer to ensure that the details and recommendations provided in the relevant BGC Fibre Cement (NZ) installation guide are suitable for the intended project and that specific design is conducted where appropriate.

The instructions and recommendations in BGC Fibre Cement (NZ) literature are based on good building practice, but are in no way an exhaustive statement of all relevant information and are subject to conditions above. BGC Fibre Cement has tested the performance of its products when installed in accordance with the products technical specification, in accordance with the standards required by the New Zealand Building Code. Those test results demonstrate the products compliance with the performance criteria set out by the New Zealand Building Code.







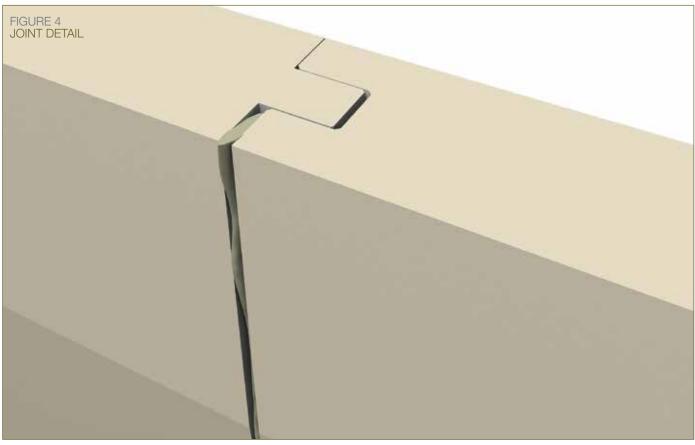




















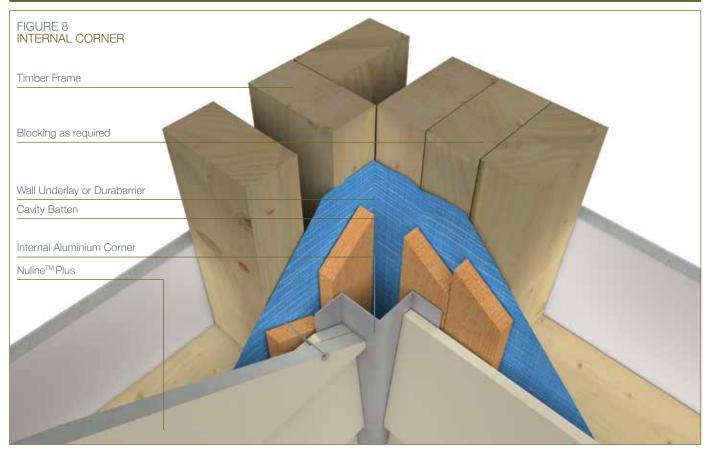


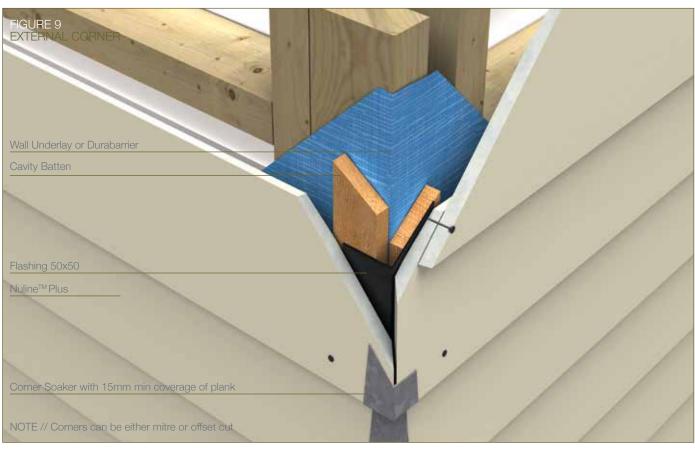
















PLANK OVERLAPS

Planks must overlap the previous course by a minimum of 30 mm. Higher overlaps may be used to match the wall height to the plank width.

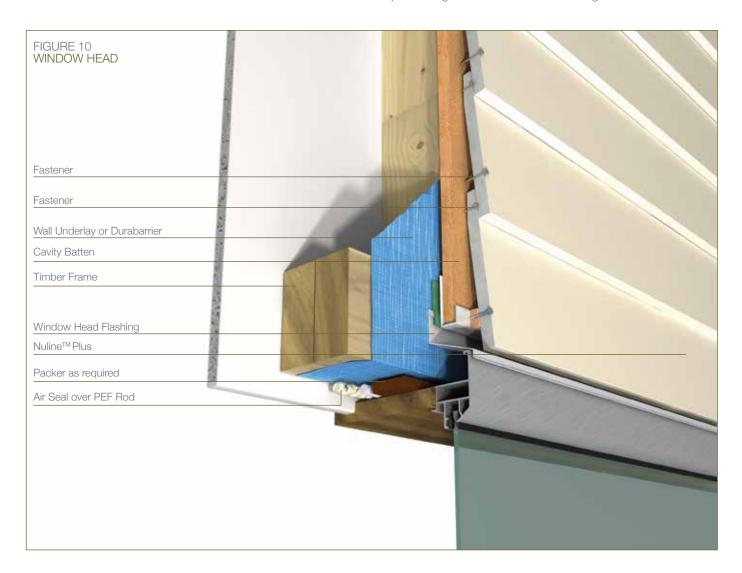
CUTTING AROUND OPENINGS

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.

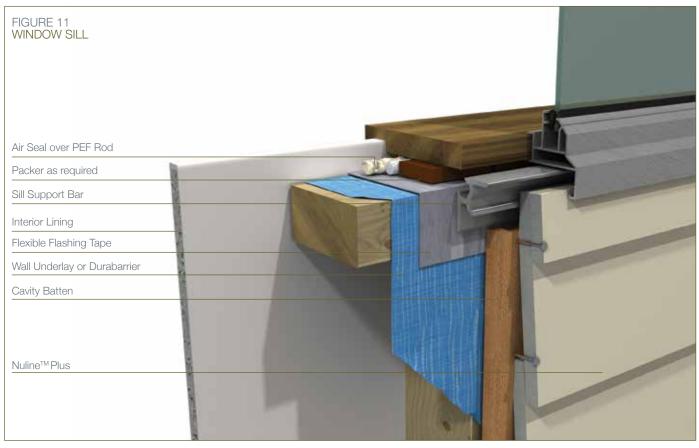
A plank joint at one end for small openings and both ends of longer openings will make installation easier and eliminate breakages.

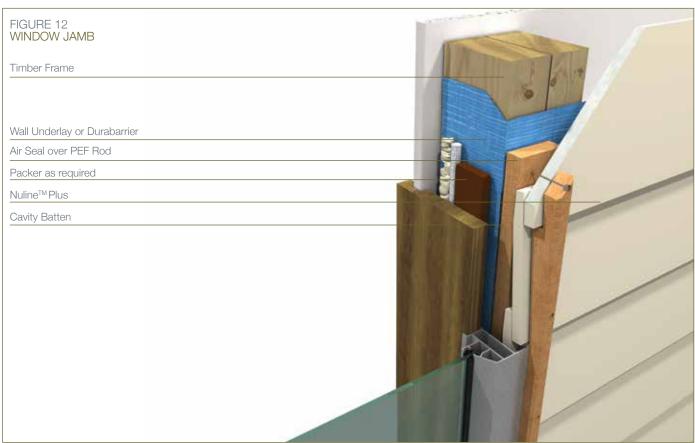
Flashing and mouldings must be installed as appropriate to prevent ingress of water into the framing.















NOTES





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Fibre Cement



Endorsed







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.

 ${\sf DURAFLOOR^{TM}}$ / Is the ultimate flooring product that can used in both interior and exterior applications.

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

DURAGROOVE™ / A vertically grooved exterior facade panel.

 $\text{DURASCAPE}^{\text{\tiny{IM}}}$ / 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.

 ${\sf STRATUM^{TM}}$ / 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.

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

 $\text{DURALATTICE}^{\text{TM}}$ / 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™ / Suitable for exterior applications where it will be sheltered from direct weather.

INTERIOR PRODUCTS AND APPLICATIONS BGC FIBRE CEMENT RANGE OF PRODUCTS

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

DURALINER™ / 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.