

# **DURABARRIER** RIGID SHEATHING / AIR BARRIER



**BGC** Fibre Cement

AUSTRALIAN OWNED & MANUFACTURED WWW.BGCINNOVADESIGN.CO.NZ 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.



DURABARRIER IS A RIGID SHEATHING / AIR BARRIER FOR ALL TYPES OF RESIDENTIAL AND COMMERCIAL TIMBER-FRAMED OR STEEL FRAMED BUILDINGS. DURABARRIER RESISTS HIGH WINDS BY EQUALISING AIR PRESSURE WITHIN THE CAVITY TO EXTERNAL CONDITIONS.

DURABARRIER CAN BE CHOSEN AS EITHER A 4.5MM OR 6MM-THICK FIBRE CEMENT SHEET, SEALED ON THE FACE AND EDGES AND SPECIALLY MANUFACTURED FOR USE AS A RIGID SHEATHING.

DURABARRIER:

- / RESISTANT TO MOISTURE DAMAGE AND ROT WHEN INSTALLED CORRECTLY
- / CORRECT INSTALLATION WILL ENSURE RESISTANCE TO MOISTURE DAMAGE AND ROT
- / SUITABLE FOR UP TO THE EXTRA HIGH WIND ZONE OR UP TO 2.5KPA (ULS) FOR SPECIFIC DESIGN
- / FACE-SEALED TO RAPIDLY DISPLACE MOISTURE
- / PROVIDES SHORT TERM WEATHERTIGHTNESS
- / TEMPORARILY SECURES BUILDINGS AHEAD OF CLADDING
- / BRANZ APPRAISED (NO 721, 2011) AND TESTED AGAINST TABLE 23, NZBC ACCEPTABLE SOLUTION E2/AS1





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\* FOR A FULL SET OF ARCHITECTURAL DETAILS IN PDF OR DXF, PLEASE REFER TO WWW.BGCINNOVADESIGN.CO.NZ OR CONTACT BGC FIBRE CEMENT (NZ) /5

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## PRODUCT DESCRIPTION

Durabarrier is available as 4.5mm and 6mm thick fibre cement sheets that have been sealed on the face and edges and are specifically manufactured to be used as a Rigid Sheathing.

Durabarrier has been BRANZ Appraised (Appraisal number 721 [2011]) and tested against the requirements of Table 23 of NZBC Acceptable Solution E2/AS1.

Durabarrier is designed to resist high wind pressures in building facades where it creates a wind barrier which equalizes the pressures within the cavity to the external pressures.

#### PRODUCT INFORMATION

Durabarrier is an autoclaved, cellulose fibre reinforced silica/ cement panel specially formulated and prepared to meet the requirements for use in exterior applications. The face is sealed with a water repellent coating and tinted light green.

Durabarrier fibre cement sheets are manufactured to conform to the requirements of NZS/AS2908.2 Cellulose Cement Products and are classified as Type A Category 3 sheets for external applications.

BGC Fibre Cement manufactures Durabarrier under the rigorous Quality Management System of the International Standard ISO9001:2008 and is a holder of License agreement number QEC2955/13.

For a copy of the Material Safety Data Sheet (MSDS) for Durabarrier, contact BGC Fibre Cement (NZ) or visit www.bgcinnovadesign.co.nz

## DURABARRIER MASS

The approximate weight of Durabarrier at equilibrium moisture content (7% moisture) is 7.1kg per  $m^2$  for 4.5mm thickness and 9.5 kg per  $m^2$  for 6.0mm thickness.

# APPEARANCE

Durabarrier is a smooth flat fibre cement sheet, cut to size and finished with square edges. It has a light green, sealed face and can be identified by Durabarrier printed on the front and back of the sheets.

# SHEET SIZES

THICKNESS	WIDTH	LENGTH mm		
mm	mm	2400	2700	3000
4.5	1200	Х	Х	
6	1200	Х		Х

### FIRE RESISTANCE RATING

#### **30 MINUTE FRR**

To achieve a 30/30/30 FRR, Durabarrier must be installed as below:

**Exterior face:** Durabarrier 6.0mm fixed with 40 x 2.8mm flathead galvanised nails at 150mm centres to all sheet edges and intermediate framing. All sheet edges to be fixed over solid timber framing. Durabarrier to be fixed 12mm from sheet edge and minimum 50mm from sheet corners.

**Timber Framing:** Minimum 90mm deep x 45mm wide, in accordance with NZS3604. Studs at maximum 600mm centres. Noggings at maximum 800mm centres. Double or staggered studs may be used.

**Insulation:** Any R2.2 nominal 95mm thickness fibreglass insulation.

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

For full details, architectural drawings and loading tables contact BGC Fibre Cement (NZ).

60 MINUTE FRR Please refer to BGC Fibre Cement (NZ) for 60 minute FRR details.





# BRACING

Durabarrier 6.0mm can be used to provide bracing for timber framed construction designed and constructed as per NZS3604. Table 1 is a summary of the bracing rating (racking resistance) as tested by BRANZ.

**Table 1** Bracing ratings for 2.4m high timber framed walls- clad with 6.0mm Durabarrier and founded on eitherconcrete or timber floor.

ELEMENT TYPE	MINIMUM LENGTH OF BRACING ELEMENT (m)	RATING WIND (BU/m)	RATING EARTHQUAKE (BU/m)
BGC – DB1 Timber Foundation	1.2	130	110
BGC – DB2 Timber Foundation	2.4	95	65
BGC – DB3 Concrete Slab	1.2	130	110
BGC – DB4 Concrete Slab	2.4	95	65

Bracing units per metre of element length, in accordance with NZS3604.

#### **Hold Down Requirements**

#### DB1 and DB2

The bottom plate shall be nailed through to 100mm wide joists (or blocking) using pairs of  $100 \times 4$ mm galvanised flathead nails at 600mm maximum centres. The nails must be equally spaced across the plate.

#### DB1

Secure every second stud (@ sheet sides) to the floor joist with  $260 \times 25 \times 1$ mm galvanised mild steel straps. Fasten the straps with six  $30 \times 2.5$ mm galvanised flathead nails each side Strap centres – 1200mm typical.

#### DB3 and DB4

The bottom plate must be bolted to M12 x 150mm hot-dip galvanised bolts with 50 x 50 x 3mm hot-dip galvanised washers or proprietary anchors with a minimum characteristic pull-out strength of 15 kN and embedded at least 75mm into the concrete foundation. Bolt Centres – 1200mm typical (1400mm maximum).

#### DB3

Secure every second stud (@ sheet sides) to the bottom plate with a 130 x 90 x 130mm U shaped bracket formed from 25x1mm galvanised mild steel strap, fitted under the bottom plate and fastened to the stud with six 30 x 2.5mm flat-head galvanised nails at each side. Strap centres – 1200mm typical.

# NOTES ON BRACING

#### Wall Height

FOR A WALL HEIGHT OF H: Where H is greater than 2.4m the bracing rating in Table 1 must be reduced by the factor 2.4/H(metre). Where H is less than 2.4 the bracing ratings in Table 1 shall be used.

#### Cladding

The walls must be clad on at least one side with 6.0mm Durabarrier. Additional lining or cladding may be used without prejudice to the ratings.

#### Construction

Timber framing at least equivalent to MSG 8 90 x 45mm Kiln Dried Radiata pine, shall be used. Framing joints shall be nailed as specified by NZS3604. For Bracing applications Durabarrier must be fixed vertically.

#### Fixing

Durabarrier bracing sheets must be nailed to the framing around the edges and at all intermediate framing (studs and noggings) at 150mm maximum centres.

Fixings must not be placed Closer than 50mm from sheet corners Closer than 20mm from the sheet top and bottom edges (top and bottom plates) Closer than 12mm from the sheet edge

To meet the NZBC requirement of at least 50 years durability for structural elements, external cladding sheets must be fixed with 40 x 2.8mm Stainless Steel Annular grooved flathead nails.

Durabarrier must overhang the foundation slab or lower plate by a minimum 15mm. The sheet overhang must not be nailed to the foundation or floor joist.

#### Hold Down Straps

End straps shall be fabricated from  $25 \times 1$ mm mild steel strapping and be secured with 6 of  $30 \times 2.5$ mm galvanised f lat head nails each side.

Straps that are exposed to the sub floor atmosphere (the sub floor is open to the weather or the sub floor has base boards with 20mm maximum gaps between boards) must be stainless steel.





## COMPLIANCE

Durabarrier complies with the relevant performance requirements of the New Zealand Building Code (NZBC) and has been BRANZ Appraised – refer BRANZ Appraisal 721 [2011].

## WIND LOADING

Durabarrier is suitable for use in all wind zones of NZS3604, up to and including 'Extra High'. Durabarrier can also be used on timber framed buildings, subject to specific design up to a design differential ultimate limit state (ULS) wind pressure of 2.5kpa.

#### HANDLING AND STORAGE

Durabarrier should be stacked flat, up off the ground and supported on level equally spaced (max 450mm) gluts. The sheets must be kept dry, preferably by being stored inside a building. When stored outdoors they must be protected from the weather.

Care should be taken to avoid damage to the ends, edges and surfaces. Sheets must be dry prior to being fixed. Sheets must be carried on edge.

## HEALTH AND SAFETY

Durabarrier is manufactured from New Zealand cellulose fibre, finely ground sand, Portland cement and additives. As manufactured, the product will not release airborne dust, but during drilling and sanding operations cellulose fibres, silica and calcium silicate dust may be released. Breathing in fine silica dust is hazardous, prolonged exposure (usually over several years) may cause bronchitis, silicosis or cancer.

# AVOID DUST INHALATION

When cutting Durabarrier sheets, use the methods recommended in this literature to minimise dust generation. These precautions are not necessary when stacking, unloading or handling fibre cement products.

For further information or a Material Safety Data Sheet contact BGC Fibre Cement.

#### SHEET CUTTING AND DRILLING

Durabarrier 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 should be worn. It is recommended that work always be carried out in a well-ventilated location.

The most suitable cutting methods are:

/ SCORE AND SNAP

Score the sheet face 4 or 5 times with a 'score and snap' knife. Support the scored edge and snap the sheet upward for a clean break.

/ HAND GUILLOTINE

Cut on the off-cut side of the line to allow for the blade thickness.

/ 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.

/ DURABLADE

180mm diameter. This unique cutting blade is ideal for cutting fibre cement. It can be fitted to a 185mm circular saw, ie. Makita or similar. Please ensure safe working practices when using Durablade.







# CONSTRUCTION

#### FRAMING

Timber framing must comply with current NZ Standards and any specific engineering design specifications.

Timber framing must be treated and have moisture contents as per the requirements of NZS3602.

Durabarrier requires a minimum framing width of 45mm.

Timber framing must have a maximum moisture content of 20% at the time of installation of BGC Durabarrier.

# FIXINGS

Durabarrier must be fixed with the tinted sealed face towards the future cavity and the unsealed face on to the framing.

Durabarrier is to be fixed with:

- / 40 x 2.8mm flat head fibre cement nails
- / 32 x 3.06mm 9mm head coil gun nails

Where Durabarrier is used for the fire ratings – it must be fixed with 40 x 2.8mm flat head fibre cement nails at maximum 150mm centres to all framing.

Where Durabarrier is used for Bracing – it must be fixed with 40 x 2.8mm flat head fibre cement Stainless Steel nails at maximum 150mm centres to all framing.

NZ S 3604 WIND ZONE	FIXING CENTRES TO STUDS, PLATES AND DWANGS		
	4.5mm	6.0mm	
L	300	300	
Μ	300	300	
Н	200	300	
VH	200	200	
EH	150	200	
<2.5kpa	150	200	
Bracing	N/A	150	

The above table is for both 40 x 2.8mm and 32 x 3.06mm nails

Nails must be positioned 12mm from the sheet edges and no closer than 50mm from the sheet corners. Nails must be driven just flush with the sheet surface.

Fixings must comply with the minimum durability requirements of the NZBC.

As per the requirements of NZS3604, Stainless Steel (min 304) or protected hot dipped galvanised steel fixings must be used in the seaspray zone (Zone D) and otherwise as shown in NZS3604 Figure 4.2.

Fixings outside Zone D may be hot dipped Galvanised. If Durabarrier is to be used to achieve wall bracing (in all exposure zones) it must be fixed with stainless steel fixings.

If Durabarrier is expected to meet 50 year durability requirements; it must be fixed with Stainless Steel fixings.

## INSTALLATION

Durabarrier must be dry when installed.

All cut sheet edges must be sealed with BGC Edge Sealer or similar approved fibre cement sealer (applied as per manufacturer's instructions) prior to installation.

All sheet edges must be supported over framing.

Building wraps are not required over the framing when Durabarrier is used as a Rigid Sheathing. Durabarrier has been tested and meets the requirements of Acceptable Solution E2/AS1 Table 23.

Durabarrier should be installed with a 1-2mm gap between the sheets.

Durabarrier must overhang below the bottom plate by 15mm minimum – refer to the details at the rear of the brochure.

Durabarrier must have a gap of at least 100mm from the bottom of the sheet to the finished ground level as per the NZBC.

#### ARCHITECTURAL DETAILS

For a complete set of architectural details in pdf or dxf, refer to **www.bgcinnovadesign.co.nz** or contact BGC Fibre Cement (NZ).





# VERTICAL JOINTS

Vertical Joints are sealed by running 75mm wide Protecto Sill tape or Aluband flashing tape (or similar BRANZ Appraised flashing tape) over the joint.

#### SHEET FIXING

Durabarrier must be clean and free of dust before applying the sealing tape. The sealing tape must be pressed hard to the Durabarrier while fixing so the required adhesion is achieved.

600mm - maximum Stud centres

NOTE: BGC Durabarrier must be fixed vertically with all cut sheet edges sealed before fixing.

Nails must be positioned 12mm from the sheet edges and no closer than 50mm from the sheet corners. Nails must be driven just flush with the sheet surface.



# VERTICAL JOINT

# Durabarrier fixing nails 45mm wide min stud Sealing tape 75mm wide min 11-2mm H-12mm

# HORIZONTAL JOINTS

Horizontal Joints are flashed with either a uPVC, galvanised steel, Aluminum or colour steel Z flashing.







# INTERNAL/EXTERNAL CORNERS

Both Internal and External Corner joints are formed with a 1-2mm gap and sealed with 75mm wide sealing tape.

Horizontal uPVC flashings can be sealed with flashing tape at internal and external corners. Ensure corner sealing tape extends under horizontal flashings.









# PENETRATIONS

Any penetrations through Durabarrier must be sealed with Flexible flashing tape.

100mm of minimum coverage must be maintained over the Durabarrier around the penetration.







# FLASHINGS

Window openings must be covered with a minimum 150mm wide flexible flashing tape to run continuously over the window sill, jambs and head – lapped 50mm minimum over Durabarrier.

Durabarrier must be clean and free of dust before applying the flexible flashing tape – check with recommendations from the tape manufacturer for any specific installation instructions – i.e. primer or adhesion spray requirements.



Sloping packer to suit cladding. Packer to be installed with 5° and 50mm min clearance to cavity battens at each end

Cavity batten

Timber framing





# BALUSTRADE TO WALL JUNCTION

Balustrade to Wall junctions must be appropriately flashed refer to NZBC E2/AS1 for appropriate junction flashing details. Also refer to Architectural details.

## CLADDING

The cladding must be installed within 90 days of the Durabarrier and sealing tape being installed.

The cladding must be constructed to comply with all relevant NZBC requirements.

The cladding will require regular maintenance as detailed by the cladding manufacturer – this is a requirement of the NZBC.

#### WARRANTY

BGC Fibre Cement (NZ) warrants its products to be free from defects caused by defective materials or workmanship (manufacturer) for a period of 15 years or 50 years for bracing sheets 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.

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.

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).

## WARRANTY CONT.

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.





# ACCESSORIES / SUPPLIED BY BGC

Durabarrier 2400 x 1200 x 4.5mm Durabarrier 3000 x 1200 x 4.5mm Durabarrier 2400 x 1200 x 6mm Durabarrier 3000 x 1200 x 6mm

BGC Durablade / 180, 250 or 300mm poly crystalline diamond tipped saw blades designed to cut fibre cement.

#### ACCESSORIES SUPPLIED BY OTHERS / AVAILABLE FROM YOUR BUILDING MERCHANT

uPVC, galvanised steel, aluminum or colour steel flashings for horizontal joints, i.e. E2 Flashing Solutions - 7mm Z flashing.

#### DURABARRIER NAILS

40 x 2.8mm Fibre Cement Nails – Galvanised 40 x 2.8mm Stainless Steel Annular Grooved Nails

#### **COIL NAILS**



#### Prod Code

D40220 Paslode Pneumatic 32 x 3.06mm HD Galv Ring Coil Nail 3000 D40240 Paslode Pneumatic 32 x 3.06mm HD Stainless Steel Ring Coil Nail 3000

**COIL NAILER** 



#### Prod Code

B40210 Paslode Pneumatic CNW45R 3.06mm Coil Nailer

#### FLEXIBLE FLASHING TAPES

Protecto Wrap – 0800 776 9727 Thermakraft Industries – 0800 806 595 Or similar BRANZ Appraised flashing tape.










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Fibre Cement





BGC HAS STATE OF THE ART MANUFACTURING FACILITIES IN PERTH, WA AND DISTRIBUTION CENTRES IN ALL STATES OF AUSTRALIA AND IN NEW ZEALAND.

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 SUCH AS:

DURASHEET<sup>™</sup> / Fibre cement sheet for exterior applications.

DURATEX<sup>™</sup> / Fibre cement sheets for applied finish systems.

DURABACKER™ / Fibre cement sheet for high build plaster coatings.

DURABARRIER / A rigid sheathing/air barrier for all types of timber framed construction.

DURAPLANK<sup>™</sup> / Woodgrain and smooth fibre cement plank for exterior applications.

DURAGRID<sup>™</sup> / A lightweight facade giving a modern and durable finish.

DURAGROOVE™ / A vertically grooved cladding.

DURASCAPE<sup>™</sup> / A base sheet with a 5mm shiplap join.

 $\ensuremath{\mathsf{DURALINER}}\xspace^{M}$  / Interior lining suitable as a substrate for tiles and is ideal for wet areas.

NULINE<sup>™</sup>PLUS / Weatherboard cladding system.

STONESHEET<sup>™</sup> / Fibre cement stone slip substrate.

SAFE WORKING PRACTICES - PLEASE WEAR A P1 OR P2 MASK AND SAFETY GOGGLES (APPROVED TO AS/NZW1337 STANDARDS) WHILST CUTTING OR INSTALLING DURABARRIER. DURABARRIER CAN BE SAFELY HANDLED DURING UNLOADING OR STACKING WITHOUT THE USE OF THESE PRECAUTIONS.

CLEANING UP - ALWAYS WET DOWN YOUR WORK AREA WHEN CUTTING DURABARRIER, TO ENSURE THAT DUST IS MANAGED. DISPOSE OF ANY VACUUMED DUST WITH CARE AND USING CONTAINMENT PROCEDURES.

WWW.BGCINNOVADESIGN.CO.NZ

DESIGN WWW.THESHAPEGROUP.COM.AU