

# CERAMIC TILE UNDERLAY

FLOORING SUBSTRATE



Fibre Cement



BGC FIBRE CEMENT PRODUCTS ARE EXTREMELY VERSATILE – PERFECT FOR ARCHITECTURAL FLOURISHES, EXTERNAL AND INTERNAL WET AREAS. COMING IN AN EXTENSIVE ARRAY OF SIZES AND THICKNESSES, THEY MAKE CONSTRUCTION AND RENOVATION PROJECT DESIGN DREAMS COME TRUE.



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# CERAMIC TILE UNDERLAY

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CERAMIC TILE UNDERLAY IS A SPECIALLY-FORMULATED FIBRE CEMENT SHEET. IT'S DESIGNED AS A STABLE SUBSTRATE FOR SLATE AND CERAMIC FLOOR TILES, SO YOU CAN INSTALL CERAMIC TILE FLOOR UNDERLAY OVER NEW OR EXISTING TIMBER FLOORBOARDS, PLYWOOD OR PARTICLEBOARD FLOORING.

IN DRY AREAS, APPLY TILES DIRECTLY TO CERAMIC TILE FLOOR UNDERLAY FOR AN IMPERVIOUS, EASILY-CLEANED SURFACE. IN WET AREAS AND ANYWHERE SUBJECT TO ACCIDENTAL FLOODING OR WATERSPLASH, INSTALL A WATERPROOF MEMBRANE BETWEEN THE UNDERLAY AND YOUR TILING.

## CERAMIC TILE UNDERLAY

- Specially-manufactured fibre cement sheet
- Excellent substrate for floor tiles, both slate and ceramic
- For dry and wet areas (see above)
- Can be applied to both new and existing timber floorboards, plywood or particleboard



## PRODUCT DESCRIPTION

Ceramic Tile Underlay is a specially formulated fibre cement sheet designed to provide a stable substrate for slate and ceramic floor tiles. It can be installed over new or existing timber floorboards, plywood or particleboard flooring.

In dry areas, tiling may be applied directly to the Ceramic Tile Underlay to form an impervious, easily cleaned surface.

For wet areas, and areas subject to accidental flooding or water splash, the installation of a waterproof membrane between the Ceramic Tile Underlay and the tiling is required.

## PRODUCT INFORMATION

Ceramic Tile Underlay is manufactured from cement, finely ground silica, cellulose fibres and water. It is cured in a high-pressure steam autoclave to create a durable, dimensionally stable product.

Ceramic Tile Underlay is manufactured to comply with the requirements of AS 2908.2 Cellulose Cement Products. It is classified as a Type B Category 2 sheet and is suitable for internal use.

## SHEET SIZE AND WEIGHT

| THICKNESS<br>(mm) | WEIGHT<br>(kg/m <sup>2</sup> ) | WIDTH<br>(mm) | LENGTH (mm) |
|-------------------|--------------------------------|---------------|-------------|
|                   |                                |               | 1800        |
| 6                 | 8.8                            | 1200          | ✓           |

Weights are based on Equilibrium Moisture Content

## SHEET TOLERANCES

Ceramic Tile Underlay complies with the requirements of AS2908.2.

## 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:

|                       |       |
|-----------------------|-------|
| Ignitability Index    | 0     |
| Spread of Flame Index | 0     |
| Heat Evolved Index    | 0     |
| Smoke Developed Index | 0 ~ 1 |

Ceramic Tile Underlay is deemed non-combustible and may be used where non-combustible materials are required.

Ceramic Tile Underlay has been tested in accordance with AS5637.1 and is classified as a Group 1 product.

## QUALITY SYSTEMS

Ceramic Tile Underlay sheets are manufactured under the rigorous Quality Management System of the International Standard ISO 9002:1994.

## DURABILITY

The physical properties of Ceramic Tile Underlay make it a very durable product.

- Ceramic Tile Underlay sheets are immune to permanent water damage in both short and long-term exposure.
- Ceramic Tile Underlay sheets will not rot or burn and are unaffected by termites, air, steam, salt and sunlight.
- Ceramic Tile Underlay sheets are not adversely affected over a temperature range of 0°C to 95°C.

## MOISTURE MANAGEMENT

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

This manual does not contain all information relevant for waterproofing and is to be used as a guide only. It is the responsibility of the specifier to carry out all the necessary design and detailing to ensure the waterproofing and finish satisfy all relevant codes, regulations and system waterproofing manufacturer recommendations.

## HANDLING AND STORAGE

Ceramic Tile Underlay sheets must be stacked flat, up off the ground and supported on level bearers. 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, or sealed.

## MAINTENANCE

Ceramic Tile Underlay, when used in accordance with this literature, requires no direct maintenance. However, regular checks (at least annually) must be made of the tiling system to ensure it remains watertight. Any cracked or damaged tiles, tile grout, or sealants must be repaired immediately, grouted and sealed as for new work. Any grout or sealant that is missing, cracked or likely to allow leakage, must be raked out and restored to original condition.

## HEALTH AND SAFETY

Ceramic Tile Underlay is manufactured from cellulose fibre, finely ground sand, cement and additives. As manufactured the product will not release airborne dust. However, 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 chronic bronchitis, silicosis or cancer.

## AVOID INHALING DUST

When cutting sheets, work in a well-ventilated area and 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 Fibre Cement Sales Office or go to [bgcinnovadesign.com.au](http://bgcinnovadesign.com.au)

## CUTTING AND DRILLING

Ceramic Tile Underlay sheets 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 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. It can be fitted to a 185mm circular saw, ie. Makita or similar. Please ensure safe working practices when using.



### Score and Snap

Score the sheet face 4 or 5 times with a 'score and snap' knife. 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.

### Hand Sawing

The back of the Ceramic Tile Floor Underlay sheet should be supported close to the cut. A fine toothed saw and a quick jabbing action gives best results. Mark out the cut lines on the face side of the sheet.

### Drilling

Use masonry drill bit. Do not use drill's hammer function. For small round holes such as floor drains and water pipes, a hole-saw is recommended. For other penetrations, drill a series of small holes around the perimeter of the cut-out. Tap out the waste piece from the sheet face with a hammer while supporting the underside of the opening to avoid damage. Clean rough edges with a rasp.

Remove any existing floor covering. The floor should be substantially flat before installing the underlay. If any floorboards are warped, cupped or misaligned, the entire floor should be coarse sanded. It is recommended that a competent tradesperson carry out the sanding.

For a good result it is essential that the floor structure is sound and not springy.

To prevent joint movement or cracking, floors should not deflect more than  $1/360$  of their span under maximum design loading.

For flooring laid over joists at 450mm centres this is equivalent to a deflection of 1.25mm between the joists  $\{450/360 = 1.25\}$ .

Any repairs required on existing floors must be completed prior to fixing the Ceramic Tile Underlay.

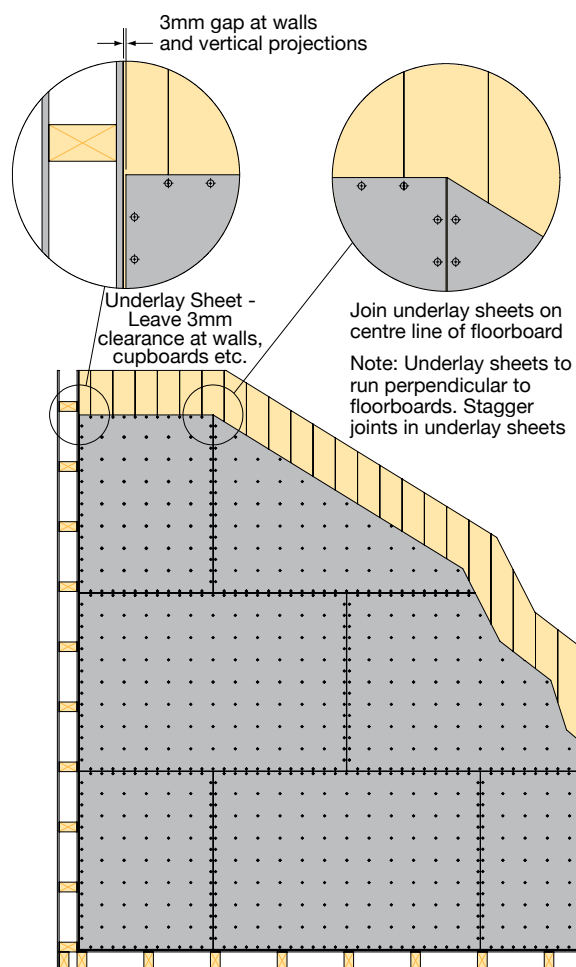
Likely problems include:

- Loose floorboards – re-nail as necessary.
- Broken or damaged floorboards – replace.
- Damaged or rotted timbers that will not hold nails or will allow movement – replace.

The floor must be free of dirt, dust and grease before commencing to install the underlay.

Installation of the Ceramic Tile Underlay sheets or tile laying must not commence until both the flooring and its supporting framework are dry.

**FIGURE 1**  
SHEET LAYOUT



For a simple layout, place a run of sheets loosely across the area to be worked. The loose layout allows for sheet manipulation and adjustments that will enable the optimum cutting and jointing positions to be established. Sheet edges can be overlapped as required to mimic the location of cuts.

For more complex areas a scaled layout is recommended.

Adjust the layout so that:

- There are no narrow edge pieces (less than 200mm wide).
- When installing over panel flooring such as plywood or particleboard, position the underlay joints so that they do not coincide with joints in the underlying floor.
- When installing over floorboards, run the sheet length (1800mm direction) at right angles to the flooring. End joints in the underlay should coincide with the centre line of a floorboard. See Figure 1.
- Existing construction joints or movement control joints must be carried through the underlay and tiling. See Figure 3.
- The underlay must finish to leave a 3mm gap at all walls and any other vertical projections in the floor.
- The underlay should be laid in a staggered (brick) pattern. See Figure 1.
- Except for movement control joints the sheets should butt up close to one another.

Use 2.5mm x 25mm underlay nails. Drive nail heads flush with the surface. For hardwood floorboards nailing of the underlay is sufficient.

For softwood floorboards, plywood and particleboard flooring, it is recommended that the underlay be glued to the floor with wallboard adhesive in addition to nailing.

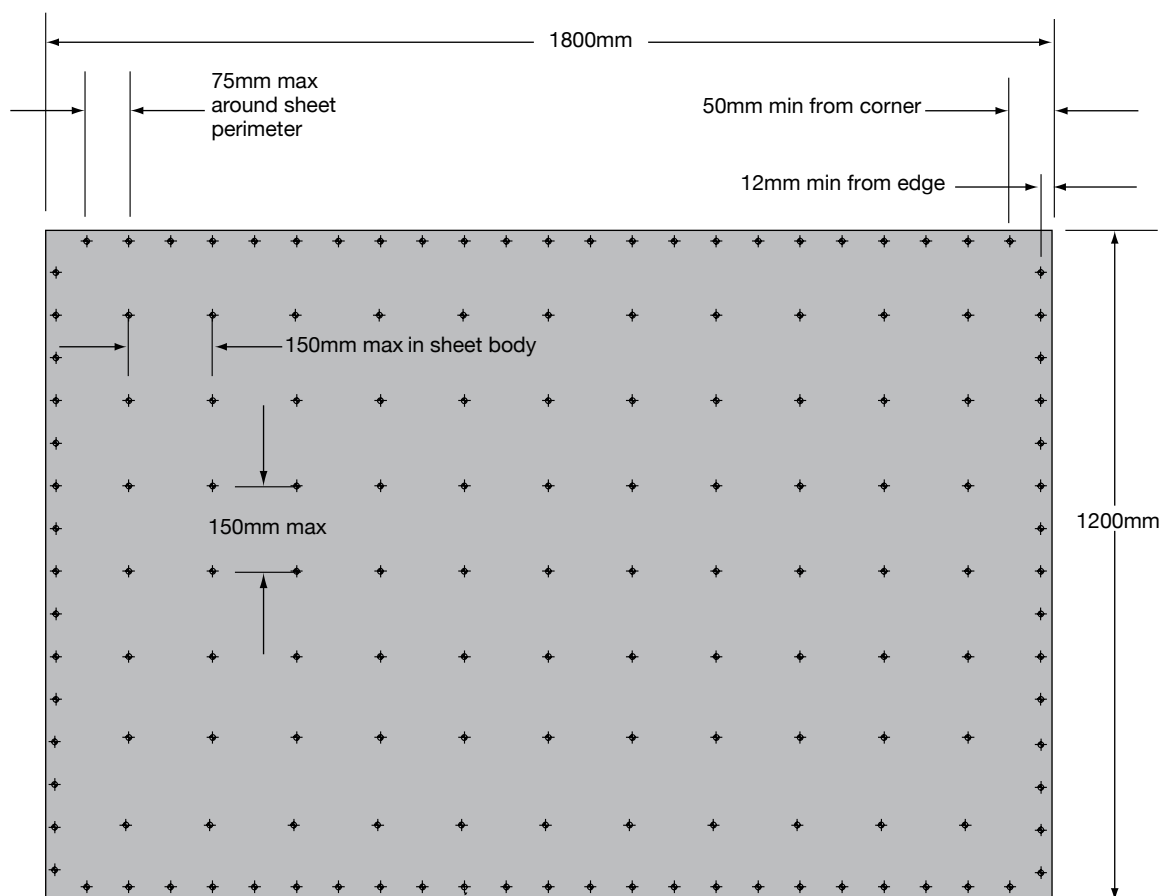
The wallboard adhesive should be applied evenly over the back of the underlay sheet with a 3mm notched trowel, paying particular attention to the edges. Position and nail down the sheet. Two or three temporary nails placed towards outer sheet ends will prevent movement as sheets are nailed down.

Nailing should proceed from the centre of the sheet outwards, to ensure sheets finish flat and tight.

Nails must be at 150mm centres in the body of the sheet and 75mm centres around the perimeter.

Nails must be a minimum of 50mm from sheet corners and 12mm from sheet edges. See Figure 2.

**FIGURE 2**  
SHEET FIXING



## MOVEMENT CONTROL JOINTS

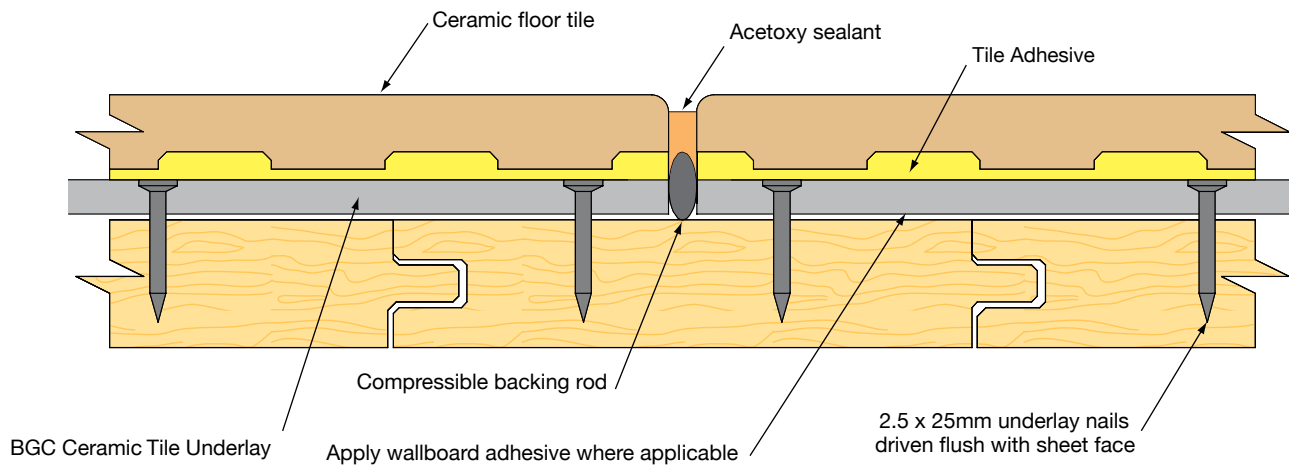
Movement control joints must be provided:

- To coincide with any existing structural or movement control joints.
- So that the maximum distance between control joint is less than 5m.
- Across any doorways and openings where the tiling is carried through.
- To coincide with changes in the room or flooring direction – such as occur in “L” shaped rooms.

The floor space either side of a movement control joint should be approximately equal. For example, in a floor run greater than 5m and less than 10m, the joint should be near the centre of the run.

The width of movement control joints should be the same as the tile grout width (approx 3mm). The joint should extend right through the underlay, tile adhesive and a tile joint. The joint should be backed with a compressible backing rod then sealed with a good quality “acetoxo sealant”.

**FIGURE 3**  
MOVEMENT CONTROL JOINT





As the ceramic tile system will effectively seal the top surface of the floor, it is essential that the underside of the floor is dry and well-ventilated. Excessive dampness can lead to problems with the floor structure.

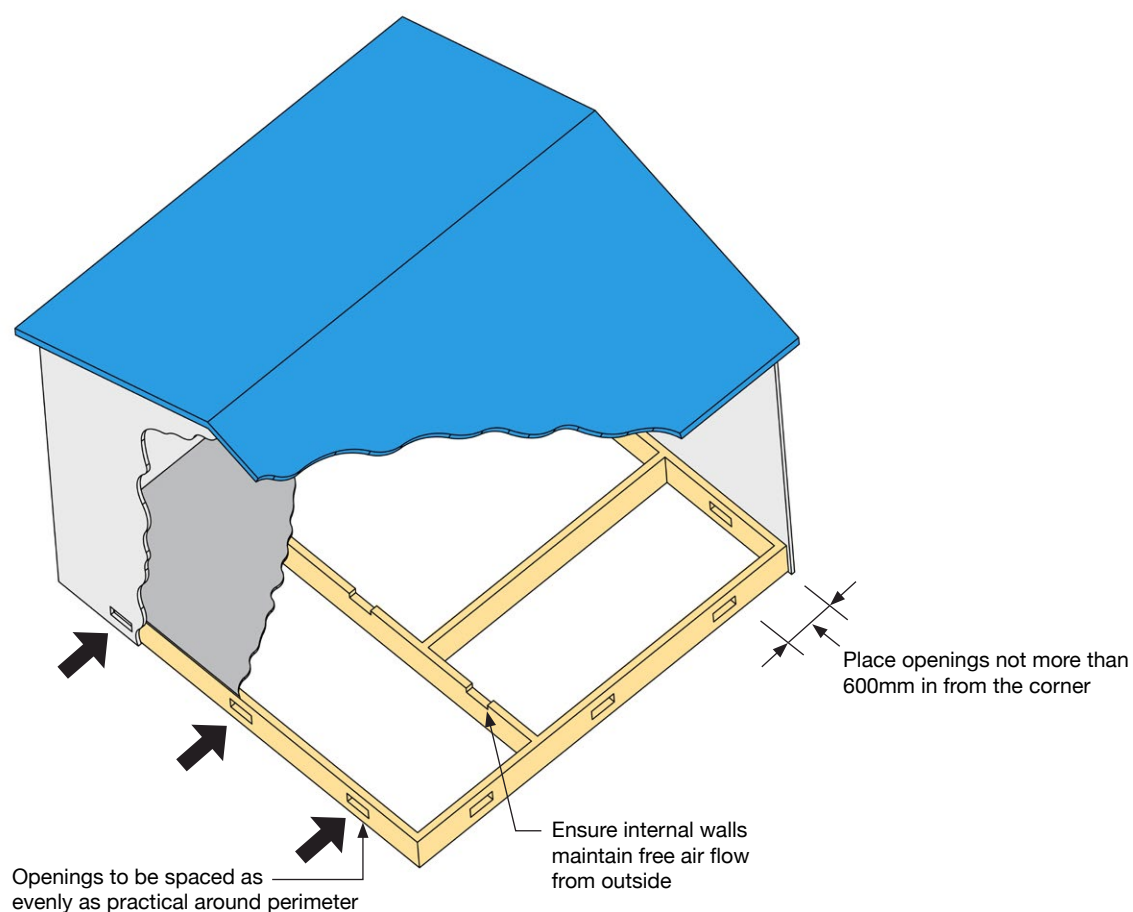
Any significant variation in the moisture content of the floorboards or the supporting structure may cause excessive movement and result in an unsatisfactory performance from the system.

A subfloor space must be cleared of all building debris and vegetation. It must have the ground beneath the suspended floor graded in accordance with the NCC and contain no dead air spaces and have openings evenly spaced as far as practicable. See Figure 4 and have openings placed not more than 600 mm in from corners.

For the layout and fixing of tiles follow the tile manufacturer's instructions.

Where movement control joints occur, they should be used as starting (or guide) lines for laying out the tiling.

**FIGURE 4**  
TYPICAL CROSS VENTILATION OF SUBFLOOR AREA



## WET AREAS

When Ceramic Tile Underlay is used in wet areas, all waterproofing must be carried out strictly in accordance with AS3740.

Figure 5 depicts some of the features to be observed when using Ceramic Tile Underlay in wet areas.

### NOTE 1 – SCREED LAYER

Wet areas and areas subjected to splash must be provided with floor drains. The floors must slope to these drains (minimum fall of 1:60). Generally a screed layer will need to be installed to achieve the required falls.

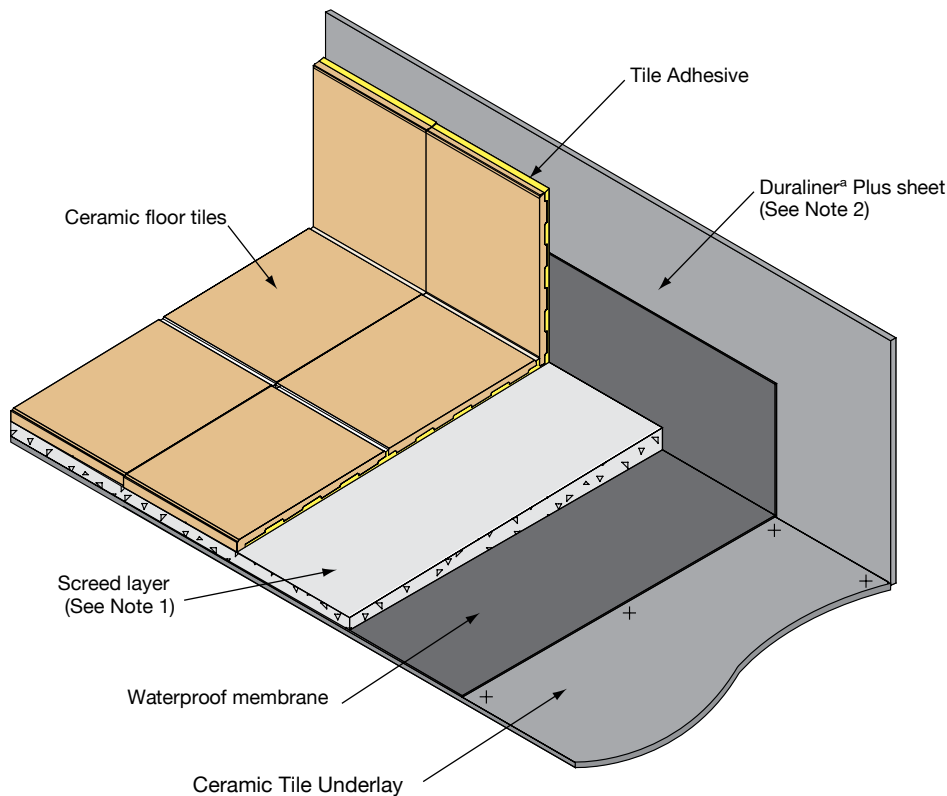
### NOTE 2 – DURALINER™ PLUS

Duraliner™ Plus provides an excellent wall lining in association with Ceramic Tile Underlay.

The Duraliner™ Plus should be flush jointed and tiled with ceramic tiles.

Details on the installation of Duraliner™ Plus are covered in our Duraliner™ Plus Brochure available on our website - [www.bgcinnovadesign.com.au](http://www.bgcinnovadesign.com.au).

**FIGURE 5**  
CERAMIC TILE UNDERLAY WET AREA DETAIL



## WARRANTY

We warrant that our products are free from defects caused by faulty manufacture or materials for the following period from the date of purchase:

- 25 years for the Nuline™ Plus, Stratum™ and Duraplank™ ranges
- 10 years for the Montage™ range and
- 15 years for all other BGC Fibre Cement and Innova™ ranges

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**

Ground Floor, 290 Bushmead Road, Hazelmere WA 6055  
Phone 08 9374 2900 Fax 08 9374 2901

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 [www.bgcinnovadesign.com.au](http://www.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.

## TERMS AND CONDITIONS

BGC Fibre Cement's Terms and Conditions of Sale ("Agreement"), as in place and published at the date of this brochure, which are available upon request or on our website at [www.bgcinnovadesign.com.au](http://www.bgcinnovadesign.com.au). The purchaser's terms and conditions, howsoever provided, do not form part of the Agreement.

TO CONTACT  
YOUR NEAREST  
BGC STOCKIST,  
PLEASE CALL:

ADELAIDE  
TELEPHONE  
08 8480 1700

BRISBANE  
TELEPHONE  
07 3548 8400

MELBOURNE  
TELEPHONE  
03 9492 1700

PERTH  
TELEPHONE  
08 9374 2900

SYDNEY  
TELEPHONE  
02 8107 9500

NEW ZEALAND  
TELEPHONE  
0011 64 9273 1457

TECHNICAL HELP LINE  
1300 652 242

[BGCINNOVADESIGN.COM.AU](http://BGCINNOVADESIGN.COM.AU)

## 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.

**MONTAGE™** / A pre-finished versatile facade system that can be used internally and externally.

**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.

### 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.

### 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 and Woodgrain finishes, Duraplank™ is ideal for exterior cladding of upper storey conversions or ground level extensions.

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

**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.

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

**BGC**

Fibre Cement

**Safe working practices** - Please wear a P1 or P2 mask and safety goggles (approved to AS/NZW1337 standards) whilst cutting or installing Ceramic Tile Underlay. Ceramic Tile Underlay can be safely handled during unloading or stacking without the use of these precautions.

**Cleaning up** - Always wet down your work area when cutting Ceramic Tile Underlay, to ensure that dust is managed. Dispose of any vacuumed dust with care and using containment procedures.