



WITH ITS SMOOTH, FLAT SURFACE AND SQUARE-EDGE FINISH, BGC'S DURACOM™ FAÇADE SYSTEM IS IDEAL FOR THE EXTERIOR CLADDING OF LOW TO MEDIUM-RISE BUILDINGS. UTILISING BGC'S TRUSTED FIBRE CEMENT-COATED COMPRESSED SHEETING, DURACOM™ DELIVERS A STRIKINGLY MODERN, DURABLE FINISH.

LIGHTWEIGHT YET EXCEPTIONALLY RESILIENT, DURACOM™ FAÇADE SYSTEM IS PERFECT FOR EXPRESSED JOINTING AND A VARIETY OF FINISHES – FROM PAINTED TO TEXTURED COATINGS.

THE DURACOM™ FACADE SYSTEM:

- / IS LIGHTWEIGHT AND HIGHLY DURABLE
- / IS WEATHER RESISTANT AND IS IMMUNE TO WATER DAMAGE – RATED FOR WEATHERABILITY BY CSIRO
- / WEATHER-RESISTANT SIMPLY SHRUGS OFF WATER DAMAGE. RATED FOR WEATHERABILITY BY CSIRO
- / FULLY-SEALED, BALANCED PANELS WON'T ROT, BURN OR CORRODE
- / ALLOWS EASY DECORATION IN A RANGE OF DESIGN FINISHES
- / RAPID INSTALLATION
- / COMPLIES WITH BAL40 AS REQUIRED IN AS3959:2009 CONSTRUCTION OF BUILDINGS IN BUSHFIRE-PRONE AREAS





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APPLICATIONS

Duracom™ Facade System, utilizing BGC Fibre Cement Compressed Panels and Cold Formed Section (CFS) steel support framing, to form a strong and durable facade cladding system.

Duracom™ panels fixed to the CFS steel support framing, are ideally suited for versatile architectural facades and parapet applications in industrial, institutional, commercial and multi-storey residential buildings.

Duracom[™] panels are designed for installation in a variety of patterns, including vertical, horizontal, brick-bond or diamond inclined.

Duracom™ panels are available in 9mm and 12mm thicknesses and are finished with site applied acrylic paint systems.



ADVANTAGES

- / Lightweight cladding system.
- / Readily accepts many forms of decorative finish.
- / Highly durable product.
- / Dynamic architectural style.
- / Fully sealed and balanced panels.

PRODUCT INFORMATION

Duracom[™] panels are a compressed, autoclaved, cellulose fibre reinforced silica/cement panel, specially formulated and prepared to meet the requirements for use in exterior applications.

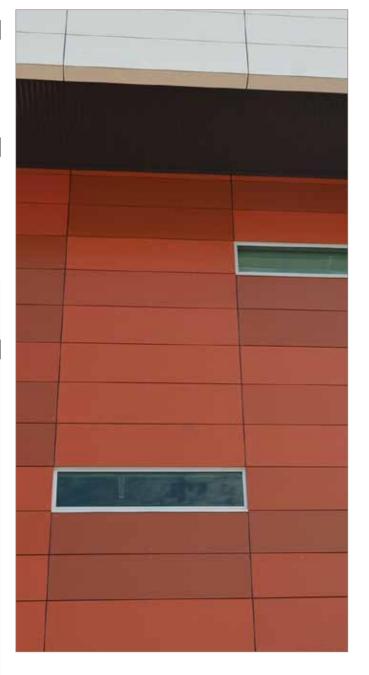
Duracom[™] panels have a smooth flat surface and a neat square edged finish, for enhanced expressed joint facades.

BGC Fibre Cement products are manufactured to the Australian / New Zealand Standard AS/NZS 2908.2-2000 Cellulose-Cement Products, Part 2: Flat sheets and Duracom™ is classified as Type A-Category 3.

THERMAL BREAKS

The Duracom[™] facade system is attached to the outside face of a metal framed wall where it is separated from the metal frame by Duracom[™] Steel Top Hats (off-stud) orientated vertically.

Where the lightweight external cladding is not fixed to the metal frame, the NCC thermal break requirements are negated therefore no Thermal Break is required when using the DuracomTM facade system.









FIRE RESISTANCE

Duracom[™] has been tested for and passed the Early Fire Hazard Property criteria in compliance with AS/NZS 1530.3 and AS/NZS 3837 and is deemed a Group 1 Material in accordance with the Building Code of Australia (BCA), Volume 1, Specification A2.4; Fire Hazard Properties. AS/NZS 1530.3; Early Fire Hazard Properties.

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

DURABILITY

Duracom[™] physical properties make it a very durable product.

- Duracom™ panels are immune to permanent water damage in both short and long-term exposure.
- Duracom™ panels will not rot or burn and are unaffected by termites, air, steam, salt and sunlight.

 Duracom™ panels are not adversely affected over a
- temperature range of 0°C to 95°C.

THERMAL CONDUCTIVITY

Duracom[™] panels have relatively low thermal conductivity: R-value. At Equilibrium Moisture content the approximate R-Value of Duracom™ is;- 0.55 W/m°C.

WEATHER RESISTANCE

- Duracom™ Facade System conforms to the Building Code of Australia (BCA) requirements for exterior wall applications.
- Duracom™ Facade System has been tested to AS/NZS 4284 Testing of Building Facades.

SIZES AND WEIGHT

Duracom[™] panels are available in the following sizes.

	THICKNESS WEIGHT kg/m2		WIDTH mm	LENGTH mm				
		kg/m²		1800	2400	2700	3000	
	9 14.6	900	✓	✓		✓		
		14.0	1200	✓	✓	✓	✓	
	12	19.5	1200		✓		✓	

SHEET TOLERANCES

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

HANDLING AND STORAGE

Duracom™ must be stacked flat, up off the ground and supported on equally spaced (max 400mm) level gluts.

Sheeting 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.

Sheets must be dry prior to fixing, jointing or finishing.

COASTAL AREAS

The durability of galvanised fasteners 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.

DURACOM™ ACCESSORIES AVAILABLE FROM BGC

PRIMARY TOP HAT	120 x 35 x 1.15mm BMT - 6000mm	BGC PRODUCT CODE 831	
GALVANISED STEEL	120 x 35 x 1.15mm BMT - 7200mm	BGC PRODUCT CODE 833	
INTERMEDIATE TOP HAT	50 x 35 x 1.15mm BMT - 6000mm	BGC PRODUCT CODE 835	
GALVANISED STEEL	50 x 35 x 1.15mm BMT - 7200mm	BGC PRODUCT CODE 837	
	1190mm	BGC PRODUCT CODE 839	
HORIZONTAL BACKING STRIP BMT 0.42	2390mm	BGC PRODUCT CODE 841	
	2990mm	BGC PRODUCT CODE 843	
EPDM FOAM GASKET	25m	BGC PRODUCT CODE 845	

FASTENERS

DURACOM™ TO TOP HATS

DURACOM™ TO TOP HATS (CONCEALED FIXING) no.10 x 30mm Countersunk Self Drilling Screw





DURACOM™ TO TOP HATS (EXPOSED FIXING) no.10 x 25mm Pan Head Self Drilling Screw





no.10 x 25mm Wafer Head Self Drilling Screw





TOP HATS TO FRAME

Class 3 Hex Head Screw, 12-14 x 20mm





/ Fasteners must comply with AS 3566, with a minimum Class 3 coating. FILLING/FINISHING OF FASTENERS

All screw holes must be filled with an epoxy sealer such as Megapoxy PI, Hilti CA125 or Hilti CA273, and then with BGC Exterior Topcoat. Allow at least 24hours to dry. Sand flush.





DESIGN CONSIDERATIONS

It is recommended that project specific facade designs be undertaken by a consultant experienced in such detailing.

The design engineer should determine the wind pressure for the project and specify the layout, spacing and fixing of the top hats to the structure.

The deflection of the supporting structure should be limited span/250 for Serviceability Wind Load, or as limited by AS/NZS1170. 2:2002

In areas where there is a probability of wind loading, care should be taken in the design detailing, especially around all openings, corners and other junctions, to ensure the weather resistance of the total system.

Before the Duracom[™] panels and the supporting substructure are installed and fixed, particular care should be taken that all flashing and waterproofing work is complete, including all vapour permeable building wraps and damp proof coursing.

TOP HAT SPANS FOR WIND LOAD / PRESSURE LOAD

Structural sub-frame spacing must be installed in accordance with BGC fixing specifications. Table 4 provides guidance on the maximum span of Top Hat profile.

The design capacities of the Duracom[™] Facade System are in limit state format and are based on AS/NZS1170.2-2002 Wind Actions.

The Top Hat capacities have been calculated in accordance with AS/NZS4600 – cold form steel structures.

The deflection of the Top Hats is based on serviceability factor of 0.6 x ultimate wind loads and is limited to span/250.

The Top Hat sections can be used for Cyclonic wind areas – region C & D based on wind pressures.

It is the responsibility of the Project Engineer to specify the connection of Top Hats to the support structure. Minimum 12g screw on each leg of Top Hat i.e. two 12g screws at each crossing of Top Hat & Purlin.

CONTROL JOINTS

In many cases, control joints will not be required as typical expressed joints permit some differential movement of the DuracomTM panels and the sub-framing.

It is recommended that the designer consider the need for control joints in the following cases:

- / Where the facade crosses a building control joint.
- / Where there is likelihood of movement in the sub-framing.
- / Continuous facades greater than eight (8) metres in length.
- / At a change in the structural substrate; eg. masonry to steel framing.
- / Refer to drawings on P17-19.

TABLE 4

DESIGN	SINGLE	SPAN	DOUBLE	SPAN	THREE	SPANS
WIND	Top Hat		Top Hat		Top Hat	
PRESSURE	Spacing mm		Spacing mm		Spacing mm	
kPA	450	600	450	600	450	600
Up to	I SPAN OF TOP HAT PROFILE					
0.75	1950	1750	2450	2150	2400	2200
1.0	1750	1600	2150	1850	2200	2000
1.5	1550	1400	1750	1500	1900	1700
2.0	1400	1250	1500	1300	1900	1700
2.5	1300	1200	1350	1200	1500	1300
3.0	1200	*	1250	*	1400	*
4.0	1050	*	1050	*	1200	*

PANEL PREPARATION

For insitu paint finish applications, Duracom™ panels are supplied sealed with a proprietary sealer applied during manufacture for durability.

Where it is necessary to cut sheets, cutting tools should have a dust extraction system.

Cut edges must be sealed with BGC Edge Sealer or an acrylic coating to eliminate moisture absorption.

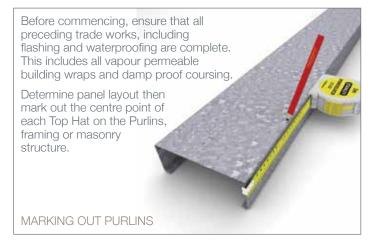
A saw blade such as BGC Durablade with a poly crystalline diamond tip specifically designed to cut fibre cement sheets is recommended.

Ensure work area is well ventilated and wear an approved dust mask (AS/NZS1715 and AS/NZS1716) and safety glasses (AS/NZS1337).

It is recommended to cut the sheets face down in order to get the best end results.



INSTALLATION



Position the Top Hats according to predetermined and marked spacings and ensure that they are vertical (check with a spirit level).

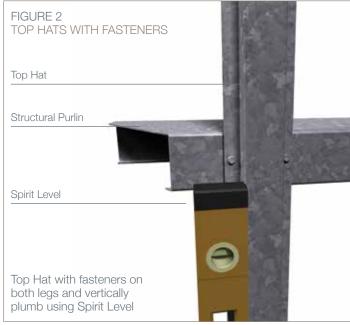


Fix the Top Hats to the Purlins using self-drilling Hex Head Wafer Screw fasteners ensuring that both legs of the Top Hats are fixed to the structural Purlins or framing.

Also, ensure that the Top Hats are mounted vertical using a spirit level to check.

For inclined or diamond patterns, check that the inclined angle of the Top Hats are correct.

The Top Hats must be fixed on both legs to minimise flexing of the Top Hats.







Apply the EPDM Foam Gasket to the primary 120mm Top Hat. The seal can be applied to the mounted Top Hat insitu or it can be applied to the Top Hat, before it is fixed to the Purlins.

Ensure that the EPDM Foam Gasket is applied to the centre of the purpose designed Primary 120mm Top Hat.



Set out, **pre-drill** and countersink the holes in the panels to be mounted, as set out in the table hereunder.

Screw holes must be pre-drilled, allowing 1mm clearance over diameter of screw.

Holes must be drilled using a masonry drill bit.

Do not use an impact drill.

Where screws are to be countersunk, depth must be controlled by gauge to restrict head depth to 3mm maximum.

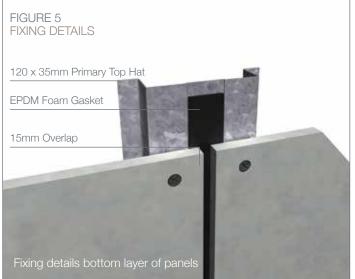
Refer to Table 5 for Maximum Spacing of Panel Fasteners.



TABLE 5, FASTENER SPACING FOR 9MM AND 12MM DURACOM™ PANELS

DESIGN WIND PRESSURE. kPA	MAX. TOP HAT SPACING. mm	MAX. FASTENER SPACING AT PANEL EDGE SUPPORTS. mm	MAX. FASTENER SPACING AT INTERMEDIATE SUPPORTS.
Up to 1.0	600	300	600
1.5	600	300	400
2.0	600	250	400
3.0	450	400	400
4.0	450	300	250
5.0	450	300	250
6.0	450	300	200

Fix the bottom row of boards allowing a 15mm overlap over the EPDM Foam Gasket. Leave the top row of screws in the board loose to facilitate the insertion of the backing strip to the board.



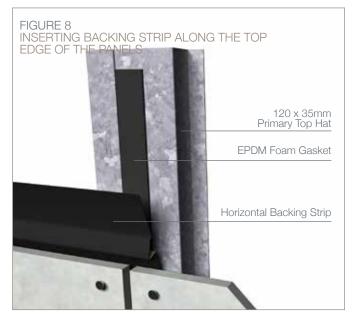
Use the backing strip to space the vertical joint of successive boards ensuring a uniform 10mm space between successive boards.



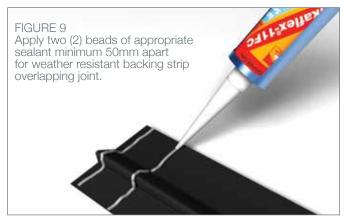
Prepare the backing strip for installation by applying an appropriate sealant to the bottom (9mm) edge of the backing strip or by applying the sealant to the top edge of the panel.

FIGURE 7 APPLYING SEALANT

Insert the backing strip behind the top of the board. Leave fasteners loose, along the top edge of the panels to facilitate insertion of backing strip.



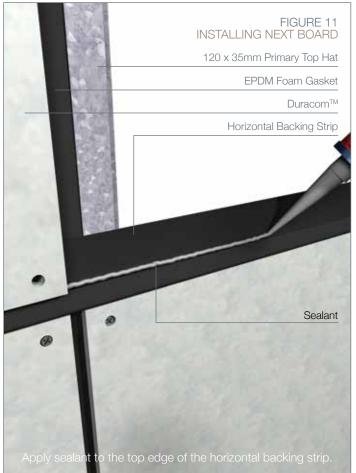
Backing strip joint details – the backing strip has been designed to overlap whilst retaining a flush fit behind the board. Backing strip joints must overlap over a Top Hat and be sealed with two (2) beads of sealant to ensure a weather resistant joint.



Overlapping backing strip joint with two (2) beads of appropriate sealant, in position over the Top Hat section.



Installation of the next layer of board – Apply a bead of the appropriate sealant to the top of the backing strip and then rest a pre-drilled panel on the top of the horizontal backing strip.







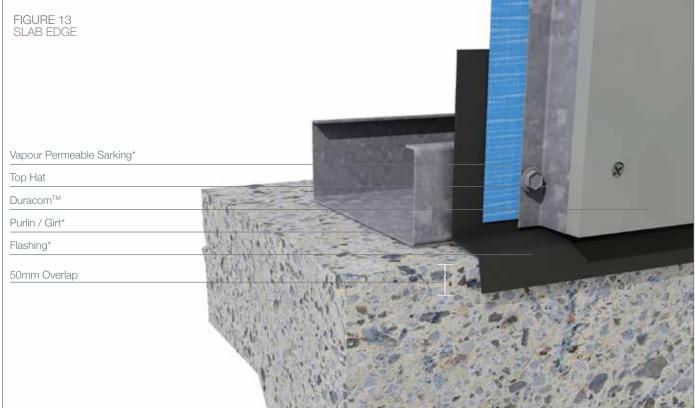
INSTALLATION DETAILS

The architectural intent and details of buildings vary from one designer to the next, and the variety of facade details would be impossible to catalogue.

The detail diagrams following are intended to assist the designer in achieving a high quality weather resistant Duracom $^{\rm TM}$ Facade.

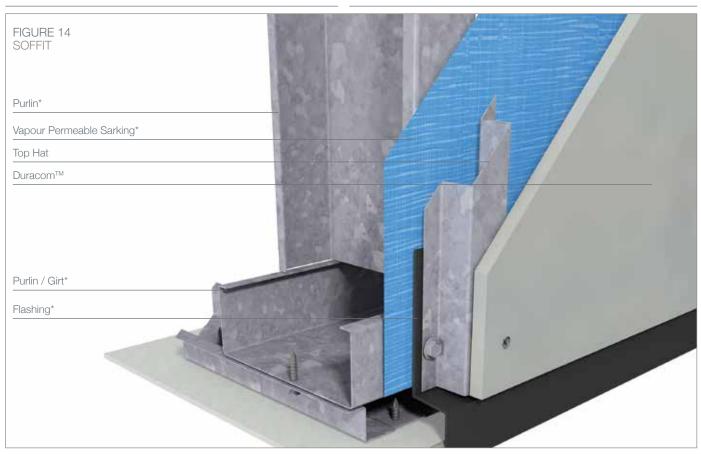
The designer should not digress from the specification set out in this manual.

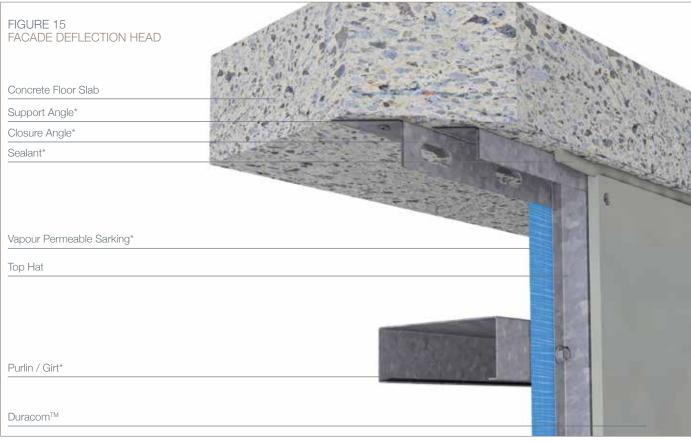








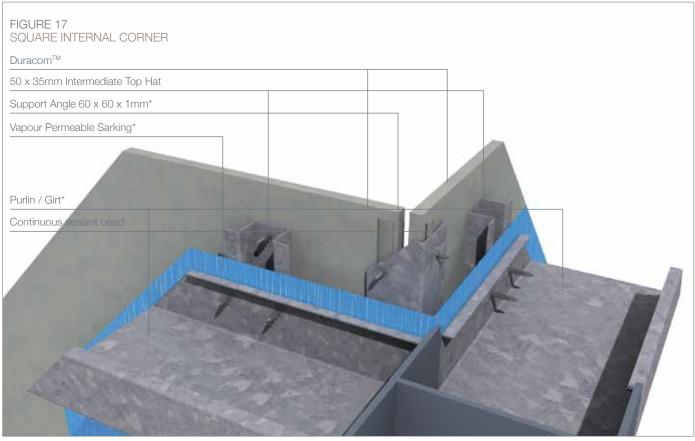


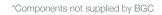






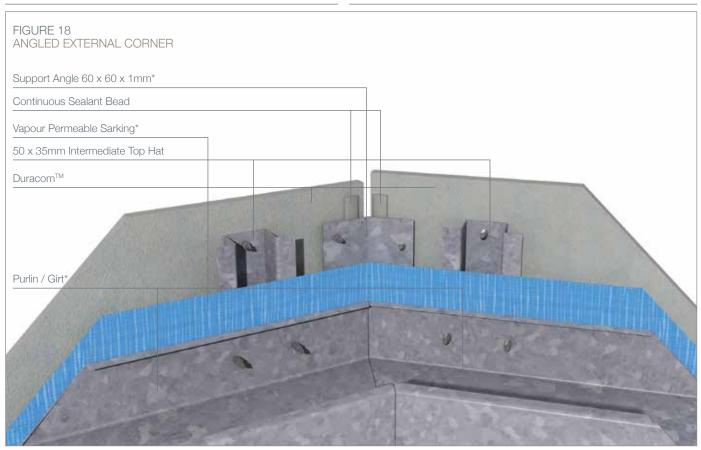


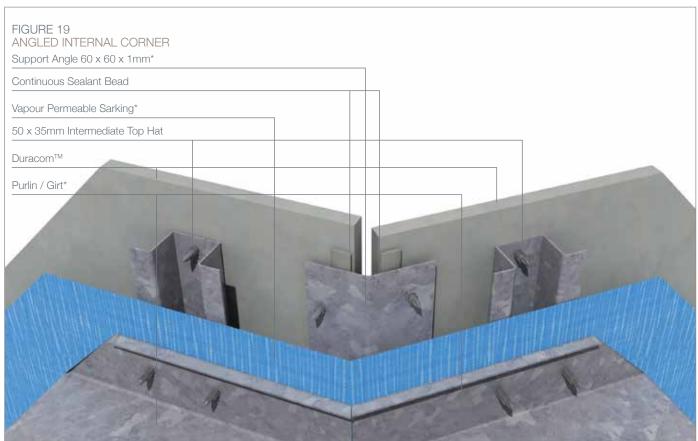


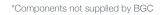














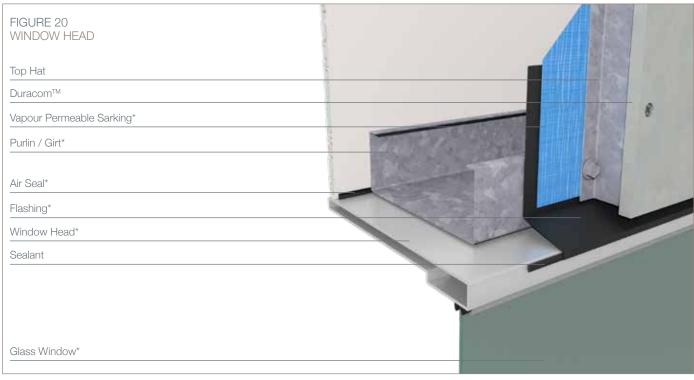


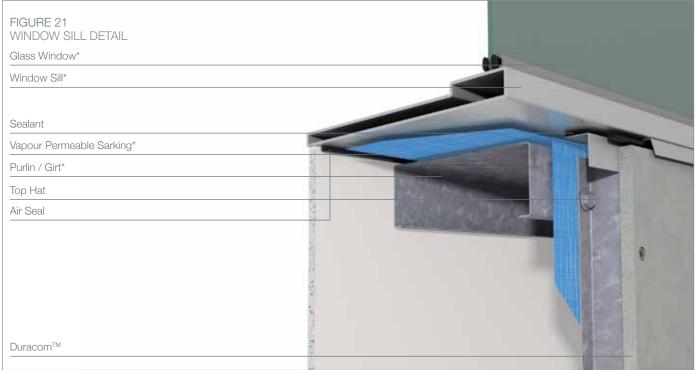
PENETRATIONS, OPENINGS, WINDOWS AND DOORS

There are numerous varieties of penetrations, openings, and windows and door treatments available, and each weather proofing detail will be dependent on the material, style and manufacturer's specifications.

Adequate weather proofing of the opening application

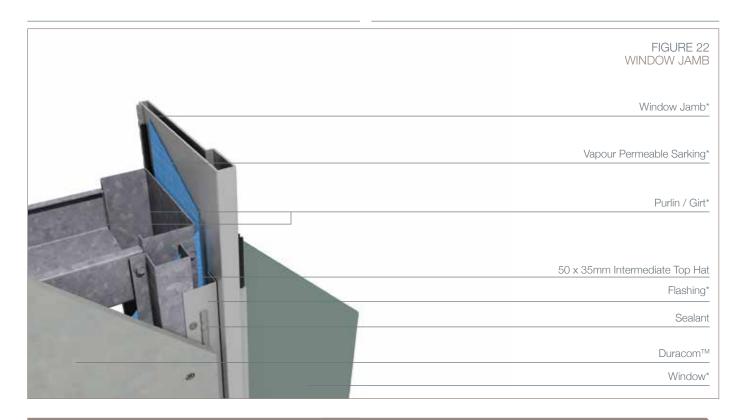
must be considered by the building designer, in conjunction with the penetration, window and door manufacturer. The diagrams below are a guide only and the designer should consult with the appropriate manufacturers for the detail design to ensure adequate weather proofing.











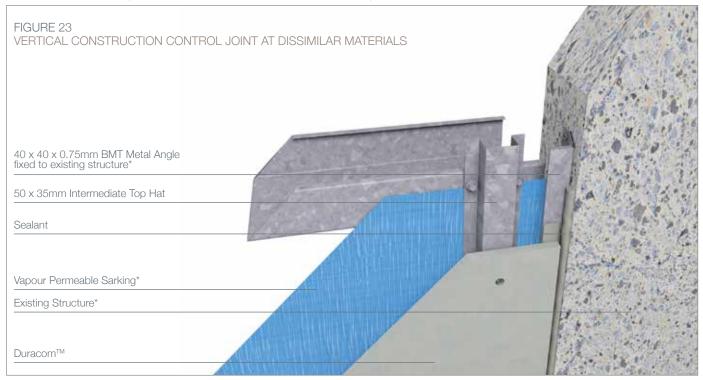
CONTROL JOINT DETAILS

Structural movement vertical and horizontal control joints are required to match existing structural control joints and should pass through the facade.

The Duracom $^{\text{TM}}$ system utilises a flat galvanised 0.75mm BMT steel strip.

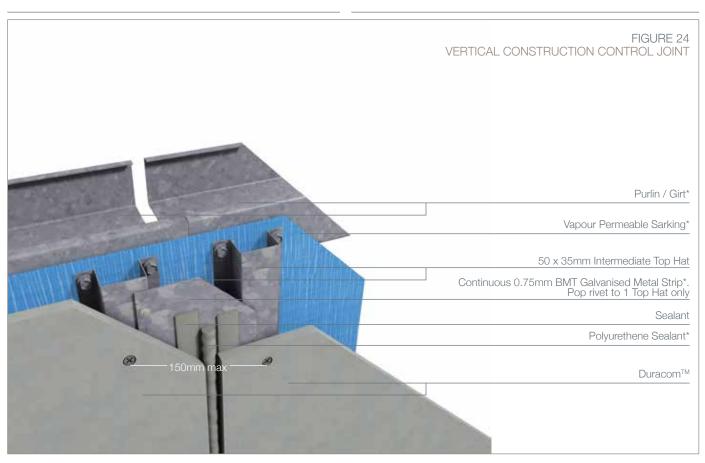
This strip bridges the Top Hats on each side of the control joint and is riveted to one side only.

Sealant is applied between the strip and the Duracom $^{\text{TM}}$ panel creating a floating weather resistant seal that allows for joint expansion and contraction.





















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).

DEEMED TO COMPLY

For an up to date and complete list of BGC Products that are 'Deemed to Comply' please refer to www.ntlis.nt.gov.au/deemedtocomply

PAINTING AND DECORATION

Duracom[™] is factory sealed on both faces and all edges. Sealing in this manner increases the durability and stability of the panels. The exterior surface of Duracom[™] must be coated with an appropriate finish. The sealed back face is not suitable for exposure to ultra violet light and therefore should not be exposed other than for short periods ie during installation. The sealed front face should be painted within three (3) months of initial exposure to ultra violet light.

The exterior/front face of Duracom™ can be finished with any of a wide variety of coatings, provided they are compatible with the Duracom™ seal coat, fasteners and with the epoxy used to cover the countersunk heads. High build, exterior grade 100% acrylic paint or aggregate finishes provide the best results.

Duracom[™] may be painted off-site when exposed head screws are to be used. Refer to appropriate painting contractors for details and colours.

A minimum dry film thickness of 250 microns is recommended to ensure adequate cover for the concealed fasteners. High gloss and low build finishes will require additional surface preparation to minimise fastener show-through. In all cases the coating manufacturer's application instructions must be followed. The interior/back face of DuracomTM is finished clear and is not suitable for painting.

Before applying finishes in coastal areas, Duracom[™] panels must be thoroughly washed with fresh water to remove any salt residue. Refer to coating manufacturer for additional requirements.

Duracom™ is not suitable for tiling.





BUSHFIRE AND BOUNDARY WALL AREAS

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).

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

BUSHFIRE AS3959:2009 APPLICATIONS

Duracom[™] may 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.

Duracom[™] 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.

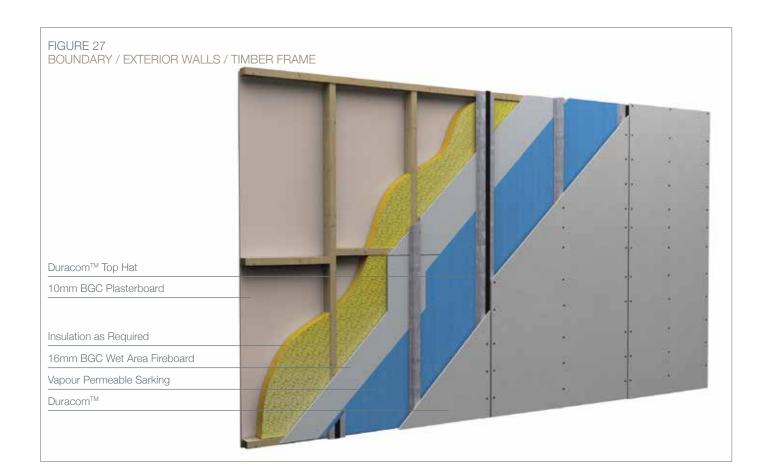
BOUNDARY / EXTERIOR WALLS

Duracom[™] 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 Duracom™ over the Wet Area Fireboard will meet minimum BCA requirements.

Similarly 2 layers of 16mm BGC Wet Area Fireboard used in conjunction with Duracom $^{\rm TM}$ will achieve 90/90/90 from the outside.

NOTE: All exterior walls must have sarking beneath the DuracomTM. No adhesives are to be used when installing Wet Area Fireboard and the DuracomTM. Nails or screws must be used. For more information please contact your nearest BGC Fibre Cement office.









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

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 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.

WARRANTY ON METAL COMPONENTS

For warranty information on the metal components specified in this design manual please contact BGC on 1300 652 242 from anywhere in Australia.





NOTES





TO CONTACT YOUR NEAREST BGC STOCKIST, PLEASE CALL:

ADELAIDE TELEPHONE 08 8250 4962

BRISBANE TELEPHONE

MELBOURNE TELEPHONE 03 9392 9444

PERTH TELEPHONE 08 9334 4900

SYDNEY TELEPHONE 02 9771 9660

NEW ZEALAND TELEPHONE 0011 64 9273 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.

 $\mathsf{DURAFLOOR}^\mathsf{TM}$ / 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.

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

STRATUM™ ERA / A traditional, yet contemporary as it is flat weatherboard.

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 $^{\text{TM}}$ / Available in Smooth, Woodgrain and Rusticated finishes, Duraplank $^{\text{TM}}$ 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.

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

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.

DESIGN WWW.THESHAPEGROUP.COM.AU