

DURAGROOVE™ WALL CLADDING SYSTEM









The stunning InnovaTM range of facade, lining and flooring products will move you to reassess your concept of excellence in facades and flooring systems. Durable and dynamic, fresh and contemporary, InnovaTM is already turning industry heads. Now let the InnovaTM range of cladding and flooring products breathe new life into your creativity and project specification.

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DURAGROOVE™ WALL CLADDING SYSTEM

For up-to-the-minute exteriors or interiors, choose DuragrooveTM cladding. A peerlessly adaptable, vertically-grooved panel available in different profiles and spacing, DuragrooveTM has a shiplap join to ease and speed your installation.

Specify Duragroove[™] for single-storey and medium-height projects. Duragroove[™] comes in four variants:

- / Narrow (100mm)
- / Wide (150mm)
- / Extra Wide (400mm)
- / Wide Woodgrain (150mm)
- / Extra Wide Woodgrain (400mm)

Duragroove™ Wall Cladding System

- Vertical grooves excitingly contemporary alternative to traditional weatherboard
- / Lightweight and durable
- / Factory sealed panels aid paint application
- / Quick to install no need for taped and filled joints
- / Panels resistant to termites, air, steam, salt and sunlight



Specify Duragroove™ with confidence









Stringently tested in Australia by **NATA** accredited authorities, validating high performance materials



Case Study 01.

Project: New Home Location: Dunsborough, WA Builder: BR Building

The house is in a bush fire zone so non combustibility and meeting the Bushfire Attack Level ratings was paramount. InnovaTM assisted the builder in deciding which if its systems was most suitable considering the aesthetic that the owner wanted as well as ease of installation and fire resistance.

"I chose Duragoove™ Woodgrain for this project as the timber grain finish provided a good contrast with the Innova™ Stratum™ which we also used on this project. Our tradies love installing these products because they are light, fast and easy to install."

Ben Ryan BR Building



Case Study 02.

Project: 5 x Affordable Housing Dwellings Location: Cloverdale, WA Architect/Developer: Modan

This project targeted the growing co-share market with primary focus being the FIFO segment so the houses are designed using apartment design principles with flowing spaces, flexibility in the use of rooms and high ceilings.

"We wanted to create buildings which emulate extruded shapes with simple and clean lines. A variety of textures were employed offset with negative space giving balance to the facades. Innova™ Duragroove™ gave us a vertical shadow line contrasting the panel effect of Duragrid™."

Arun Broadhurst Modan





DURAGROOVE™ WALL CLADDING SYSTEM

Product Description

Duragroove[™] is a strong and durable cladding that has distinctive vertical grooves. Duragroove[™] is a factory sealed 9mm flat fibre cement sheet with vertical shiplap profiled edges. Where the sheets join, the result is a 5mm vertical shiplap joint along the 2 long edges.

DuragrooveTM is suitable for low to medium rise buildings and can be used on both timber and steel framed buildings. It is also ideal for renovations and alterations to existing dwellings. In smaller areas it provides a distinctive looking feature wall and can be used in either interior or exterior applications.

Advantages

- / A choice of groove widths and finishes available
- / Has a shiplap join to ease installation
- / Is lightweight and durable
- / Quick to install as it eliminates the need for taped and filled joints
- / Panels are not affected by termites, air, steam, salt or sunlight

Sheet Sizes and Weight - Table 1

THICKNESS	PROFILE	WEIGHT kg/lm	WIDTH mm	LENGTH mm			
mm				2450	2750	3000	3600
	Narrow		1200	√	√	/	
9	Wide			√	√	✓	√
	Extra Wide	13.5		/	/	/	
	Woodgrain Wide			/	/	/	
	Woodgrain Extra Wide			✓	√	√	

Weights are based on Equilibrium Moisture Content

Duragroove™ Narrow

100mm between grooves. 4.5mm width of groove **Duragroove™ Wide**

150mm between grooves. 4.5mm width of groove **Duragroove™ Extra Wide**

400mm between grooves. 10mm width of groove **Duragroove™ Woodgrain Wide**

150mm between grooves. 4.5mm width of groove Duragroove™ Woodgrain Extra Wide

400mm between grooves. 10mm width of groove

Sheet Tolerances

Duragroove $^{\text{TM}}$ complies with the requirements of AS/NZS 2908.2.

Product Information

DuragrooveTM panels are manufactured from Portland cement, finely ground silica, cellulose fibres and water. Panels are cured in a high-pressure steam autoclave to create a durable, dimensionally stable product.

Duragroove[™] panels are manufactured to the Australian / New Zealand Standard AS/NZS 2908.2 Cellulose-Cement Products, Part 2: Flat sheets and Duragroove[™] is classified as Type A-Category 3.

Profiles











Fire Resistance

Our fibre cement products have been tested in accordance with Australian Standard AS1530.3.

These tests deemed the following Early Fire Hazard Indices:

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

Duragroove $^{\text{TM}}$ is deemed as non-combustible and may be used where a non-combustible material is required.

Thermal Conductivity

At Equilibrium Moisture Content the approximate thermal conductivity of Duragroove™ is: - 0.33 W/mK.

Weather Resistance

Duragroove[™] conforms to the National Construction Code (NCC) requirements for exterior wall applications.

Duragroove[™] has been tested to AS/NZS 4284 Testing of Building Facades.

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

Moisture Management

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

Wall construction design should consider both the interior and exterior environments of the building to effectively manage moisture. Special consideration should be given to buildings that are in extreme climates or at higher risk of wind-driven rain.

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

Durability

The physical properties of Duragroove $^{\text{TM}}$ make it a very durable product.

- / Duragroove[™] sheets are immune to permanent water damage in both short and long-term exposure.
- / Duragroove[™] sheets will not rot or burn and are unaffected by termites, air, steam, salt and sunlight.
- / Duragroove[™] sheets are not adversely affected over a temperature range of 0°C to 65°C.

Vapour Permeable Moisture Barrier

A vapour permeable moisture barrier must be installed in accordance with the AS 4200.2 – 'Pliable building membranes and underlays – Installation and the vapour permeable moisture barrier manufacturers' guidelines.

The vapour permeable moisture barrier shall comply to AS 4200.1 and should have the following properties:

/ VCM category – Vapour permeable (Class 3 or Class 4) / Water control classification – Water barrier

A vapour permeable moisture barrier is used to prevent moisture ingress by acting as a drainage plane while enabling water vapour build up from inside the frame to escape.

The vapour permeable moisture barrier must be dressed into the return of the framing for penetrations with the edges of the vapour permeable moisture barrier taped down. This must be done prior to the installation of joinery and the like. All joints in the vapour permeable moisture barrier should also be overlapped min.150mm and taped down.

Flashing

It is a requirement of the NCC to install flashings to all penetrations which includes but not exclusive to windows, doors, meter boxes, intersections etc.

Cutting and Drilling

DuragrooveTM may be cut to size on site. If using power tools for cutting, drilling or sanding they must be fitted with appropriate dust collections devices and an approved P1 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:

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.

/ 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).

Handling and Storage

Duragroove[™] must be stacked flat, up off the ground and supported on equally spaced (min 400mm) level gluts. Care should be taken to avoid damage to the ends, edges and surfaces.

Sheets must be kept dry. When stored outdoors it must be protected from the weather. Sheets must be dry prior to fixing or finishing.

EXTRA CARE MUST BE TAKEN AT THE SHEET EDGES TO PREVENT DAMAGE OF THE SHIPLAP JOIN.

Insulation - Table 2

Timber Framing (with R2.5 batts)			Steel Framing (with R2.5 batts)			
Winter	S	ummer	Winter	Summer		
2.37 (U _⊤ =0.4	2) (L	2.26 _T =0.44)	1.98 (U _T =0.50)	1.90 (U _T =0.52)		

Total R Values (m2K/W) (incorporating thermal bridging in accordance with AS/NZS 4859.1).

DuragrooveTM will require insulation to be installed in some regions that have thermal loss regulations. Insulation should be installed in accordance with the manufacturer's instructions. Insulation batt must fit snugly between framing members to minimise heat loss.





Health and Safety

DuragrooveTM 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 Inhaling Dust

When cutting sheets, 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 (P2) dust mask and safety glasses.

These precautions are not necessary when stacking, unloading or handling fibre cement products.

For a copy of our Safety Data sheet or Working Safely with Fibre Cement brochure contact the nearest Sales Office or go to www.innovafibrecement.com.au

Coastal Areas

The durability of galvanised nails and screws used for exterior cladding in coastal or similar corrosive environments can be as low as 10 years.

For this reason we recommend the use of stainless steel or min. class 4 fasteners within 1km of the coast or other large expanses of salt water.

Accessories available

INTERNAL ALUMINIUM CORNER	3000mm	PRODUCT CODE INTCNR12	
EXTERNAL ALUMINIUM CORNER	3000mm	PRODUCT CODE EXTCNR12	
ALUMINIUM HORIZONTAL FLASHING	3000mm	PRODUCT CODE HORIZ9	
EXTERNAL SNAP ON CORNER - PART A	3600mm	PRODUCT CODE SNAPCNRA36	
EXTERNAL SNAP ON CORNER - PART B	3600mm	PRODUCT CODE SNAPCNRB36	
DURAGROOVE™ JOINER (To be used when a vertical control joint as required)	3000mm x 12mm	PRODUCT CODE STRJNR12	
EPDM FOAM GASKET (Used to prevent moisture ingress at sheet joins).	25m	PRODUCT CODE 845	
THERMAL BREAK TAPE	12.5m	PRODUCT CODE THERMAROLL12.5	

Fasteners - Supplied by others

Duragroove™ to timber frame

Min. Class 3 2.8 x 40mm fibre cement nail



Min. Class 3 2.8 x 40mm Cladfast gun nail



Stainless 14G 50mm ND brad



- / Nails must be driven flush to the panel surface.
- / Nails must be driven a minimum of 30mm into the frame.
- / Care is needed when using nail guns. If variability occurs the gun should be set to under drive and the nails tapped home with a hammer.
- / Fasteners in coastal areas must be either stainless steel or min. class 4.

Fasteners - Supplied by others

Duragroove™ to steel frame

0.55-0.75BMT Min. Class 3 8 x 30mm countersunk screw





0.75-1.6BMT Min. Class 3 8 x 40mm wingtek countersunk screw



PARAPET CAP FLASHING TO FRAME

Min. Class 3 hex head 12-14 x 30mm with neoprene washer - 600mm centres





PRE COUNTERSINK When using screws to fasten Duragroove™, pre-countersinking is suggested so that the fastener is 1.5mm under the sheet surface for filling with Megapoxy P1 or similar 2 part epoxy paste and Exterior Finishing Compounds. Pre-countersink 1.5mm below surface using Countersinking Tool Duragroove™





Construction Details

Framing

Duragroove[™] panels must be installed vertically to both timber and lightweight steel frames.

Ensure that the frame is square and work from a central datum line. The frame must be straight and true to provide a flush face to receive the panels.

We recommend a maximum tolerance of 3mm-4mm in any 3000mm length of frame.

Duragroove™ will not straighten excessively warped or distorted frames and any warping may still be visible after Duragroove™ is applied. Warped framing will require remedial action.

Timber Frames

Use of a timber frame must be in accordance with AS1684 -Residential timber-framed construction and the framing manufacturers' specifications.

Use only seasoned timber. Do not use unseasoned timber as it is prone to shrinkage and can cause excessive movement.

Framing width at sheet joins must be min. 45mm wide, double studs at some joins may be required.

"Timber used for house construction must have the level of durability appropriate for the relevant climate and expected service life conditions including exposure to insect attacks or to moisture which could cause decay" - Reference AS1684.2

Lightweight Steel Frames

Use of steel frame must be in accordance with AS3623 -Domestic metal framing and the framing manufacturers' specifications.

Framing members must have a Base Metal Thickness (BMT) between 0.5 to 1.6mm. The steel framing must have the appropriate level of durability required to prevent corrosion.

The framing width at sheet joints must be a minimum of 50mm. The intermediate support studs should be a minimum of 64 x 35mm.



Fixing and Framing Requirements – Timber & Steel Framing - Table 3

		te Limit State Wind /NZS 1170.2	Within 1200mm of corners (mm)		General Areas of Walls (Away from Corners) (mm)		Timber Framing	Steel Framing
Wind Classification AS4055	Within 1200mm of corners - kPa	General areas of walls - kPa	Stud Spacing	Fastener Spacing	Stud Spacing	Fastener Spacing	AS 1684 or AS 1720.1	NASH Standard
N1	-0.94	-0.53, +0.62	600	200	600	200		
N2	-1.30	-0.74, +0.86	600	200	600	200	40mm Galv.	#10-18 x30mm
N3	-2.42	-1.16, +1.35	600	200	600	200	Flat Head Nails	
N4	-4.02	-1.72, +2.01	450	200	600	200	or screw-	
N5	-4.27	-2.14, +2.30	450(Timber) 300(Steel)	150	450	180	fixed ⁽⁷⁾	
N6	-5.77	-2.88, +3.11	300	150	450	135	screw-fixed only ⁽⁷⁾	Fibretek
C1	-2.84	-1.94, +2.08	450	200	450	200	40mm Galv. Flat Head Nails	
C2	-4.02	-3.10, +3.34	450	200	450	200	or screw- fixed ⁽⁷⁾	
C3	-4.27	-2.14, +2.30	300	150	450	180	screw-fixed	
C4	-5.77	-2.88, +3.11	300	150	450	135	only ⁽⁷⁾	

NOTES:

- 1. For Weatherproofing in N1, N2, N3, N4, C1, C2, use either AS 4200.1 vapour permeable moisture barrier; or Durabarrier Rigid Air Barrier System.
- 2. For Weatherproofing in N5, N6, C3, C4, use Durabarrier Rigid Air Barrier System.
- 3. All sheet edges must be supported on structural framing (noggings are typically not suitable structural framing)
- 4. Fixings shall be minimum 12mm from sheet edges & 50mm from sheet corners.
- 5. All fixing lengths shall be increased by 6mm when used in conjunction with Durabarrier Rigid Air Barrier System.
 6. Steel Framing in shall be; min. 0.55mm BMT G550 for N1 to N3; min. 0.75mm BMT G550 ro N4-N6 & C1 to C4.
- 7. Screw fixings to timber framing shall be at minimum #10-8 Fibre Cement Class 4 with minimum 35mm embedment into the timber framing and shall be pre-drilled and countersunk with Countersinking Tool.

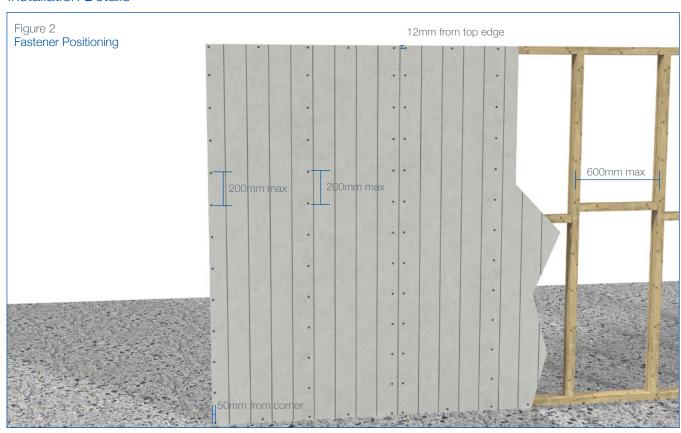
Fixing Table 50mm ND Brads to Timber Framing - Table 4

	Max. Design Ultimate Limit State Wind Pressure AS/NZS 1170.2		Within 1200mm of corners (mm)		General Areas of Walls (mm)		Timber Framing	
Wind Classification AS4055	Within 1200mm of corners - kPa	General areas of walls - kPa	Stud Spacing	Fastener Spacing	Stud Spacing	Fastener Spacing	AS 1684 or AS 1720.1	
N1	-0.94	-0.53, +0.62	600	100	600	100	Suitable	
N2	-1.30	-0.74, +0.86	600	100	600	100		
N3	-2.42	-1.16, +1.35	600	100	600	100		
N4	-3.01	-1.72, +2.01	450	100	450	100		

NOTES:

- For Weatherproofing in N1, N2, N3, N4, C1, C2, use either AS 4200.1 vapour permeable moisture barrier; or Durabarrier Rigid Air Barrier System.
- 2. All sheet edges must be supported on structural framing (noggings are typically not suitable structural framing)
- 3. ND Brads shall be minimum 12mm from sheet edges and 50mm from sheet corners.
- 4. All fixing lengths shall be increased by 6mm when used in conjunction with Durabarrier Rigid Air Barrier System.

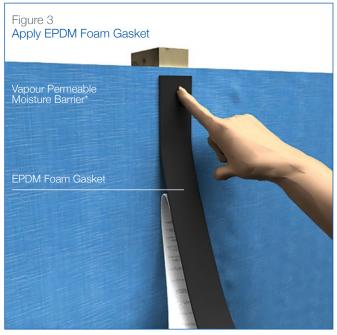
Installation Details



Duragroove™ panels should be installed vertically with all sheet edges fully supported. The centre joints must coincide with the centre lines of the framing member and all sheets should be installed in one direction.







At every vertical joint, fix a continuous strip of EPDM Foam Gasket to the vapour permeable moisture barrier along the stud. This creates a compressive seal to prevent moisture ingress at the sheet joins.

Figure 4
Sheet edge position

Vapour Permeable Moisture Barrier*

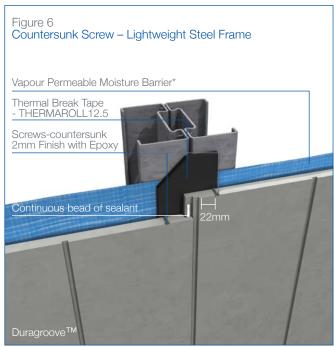
EPDM Foam Gasket

Extend sheet by 3mm beyond centre of the stud

Position the underlap sheet on every stud 3mm beyond the centre of the stud to ensure the fasteners fixed at the edge of the sheet have adequate distance into the stud.

As detailed on page 11, there are several different fasteners that can be used to fix $Duragroove^{TM}$.





To fix the first sheet, set in place ensuring the required edge distances are maintained.

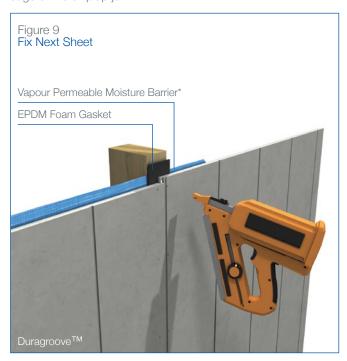
Figure 7
Fix First Sheet

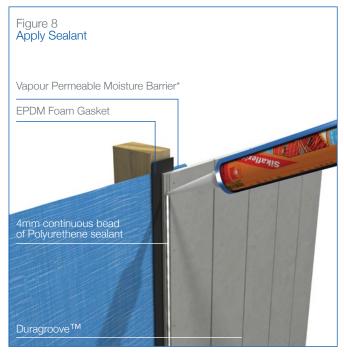
Vapour Permeable Moisture Barrier*

EPDM Foam Gasket

DuragrooveTM

Apply a continuous 4mm bead of Polyurethene sealant to the edge of the shiplap join.





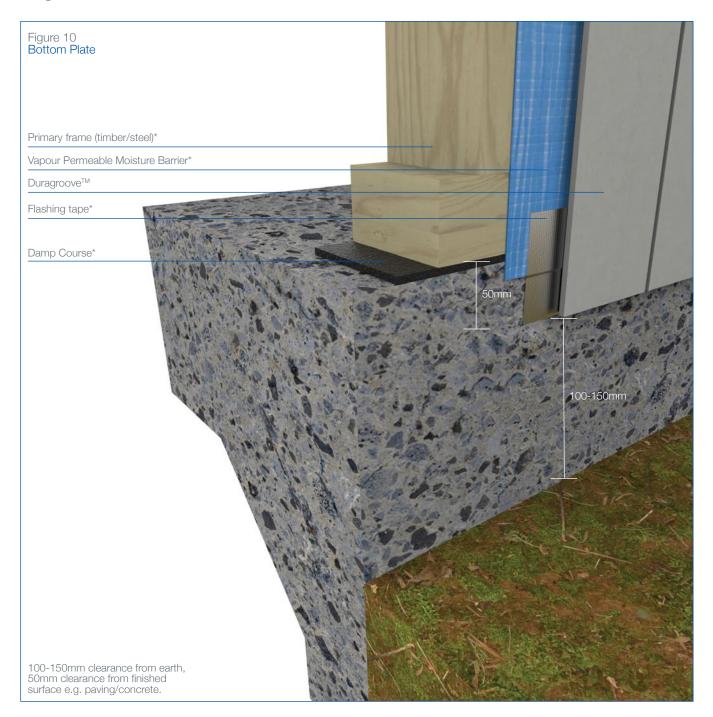


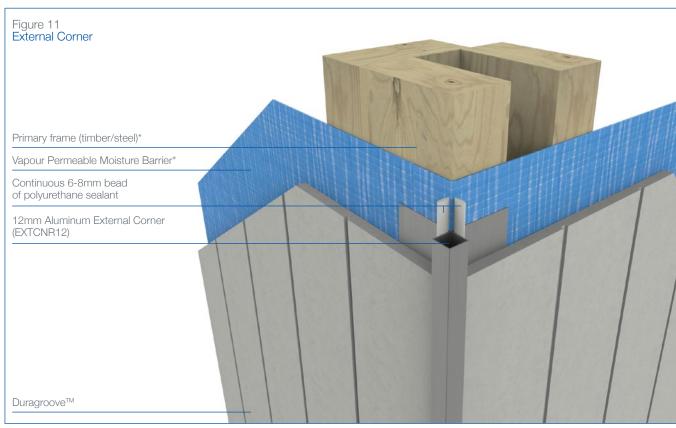


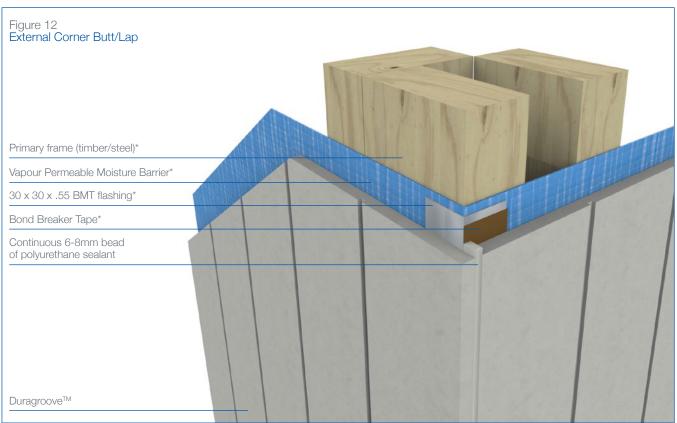
The architectural intent and details of buildings vary from one designer to the next and the variety of wall cladding details would be impossible to catalogue.

The following detailed diagrams are intended to assist the designer in achieving a high quality weather resistant Duragroove $^{\text{TM}}$ installation.

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

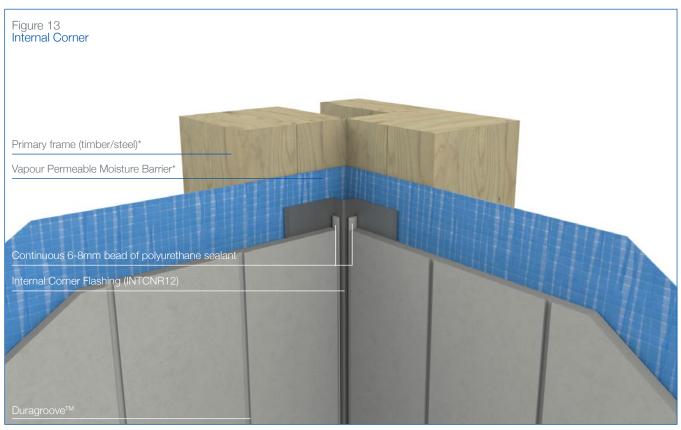


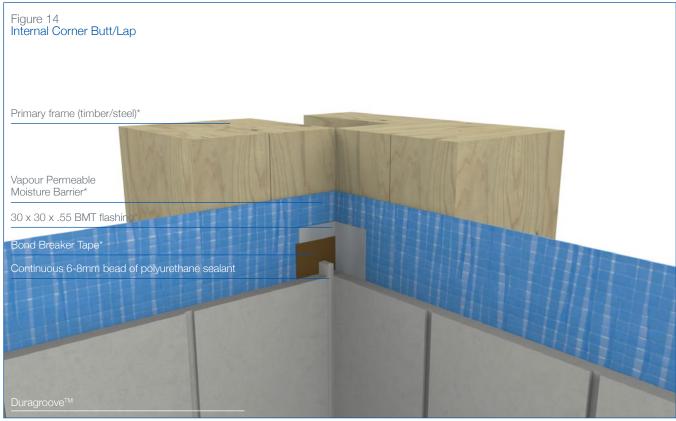


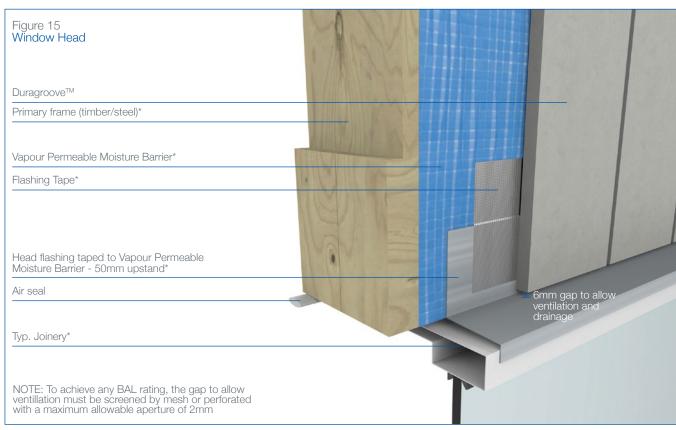


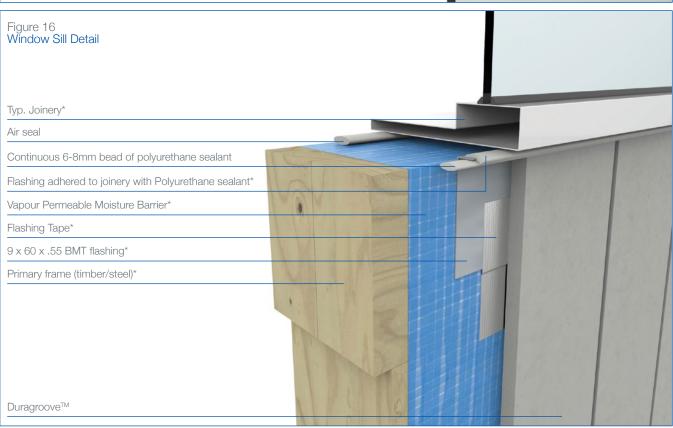






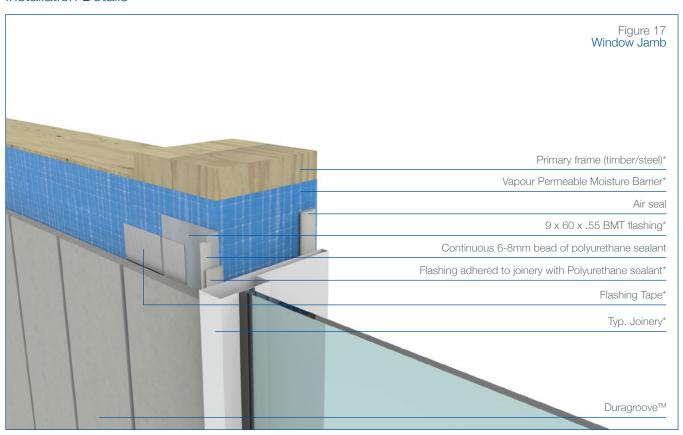


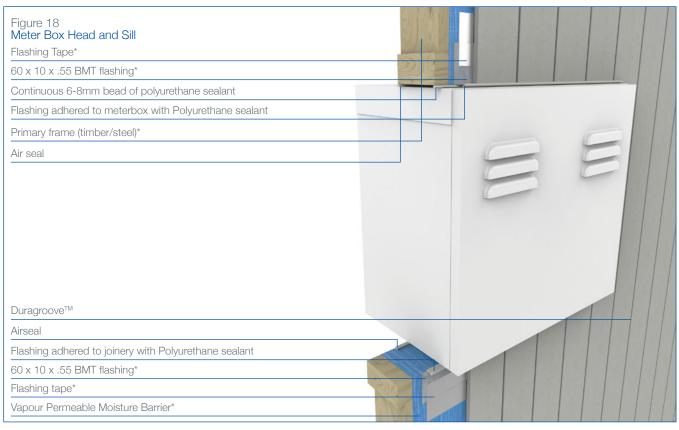




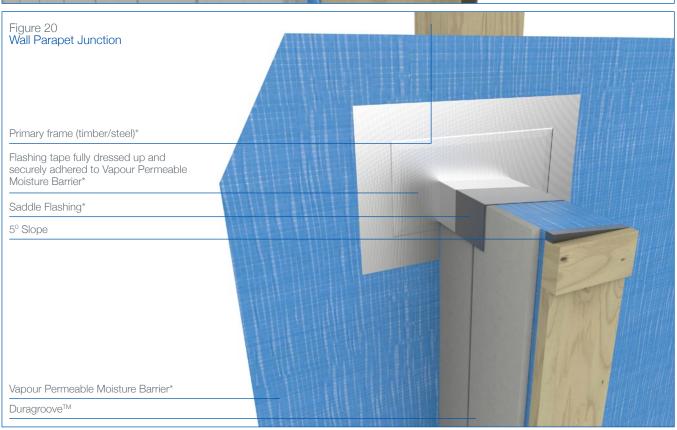






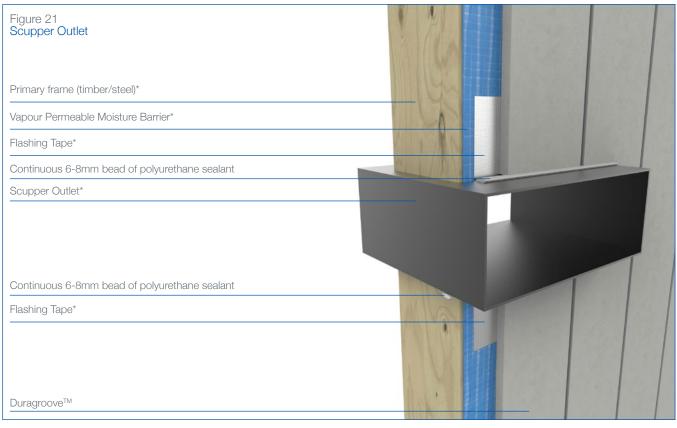






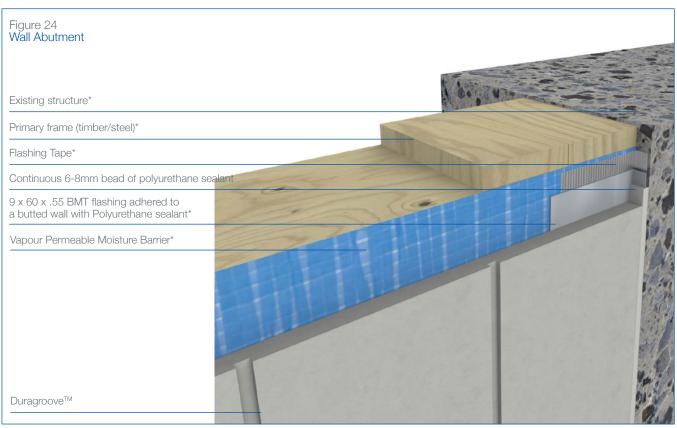














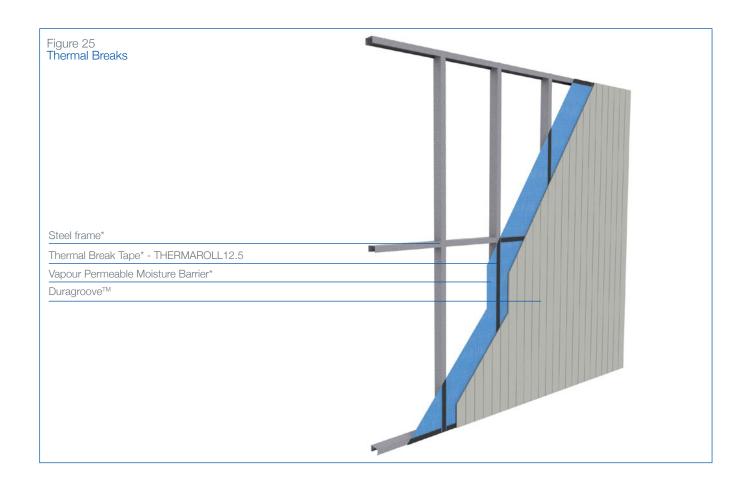


Thermal Breaks - Steel Frame

Thermal breaks may be required for steel framed buildings, in walls that are required to have a minimum total R value. Careful consideration of thermal heat transfer and the position of thermal breaks need to be addressed by the architects, engineers and building designers.

Balustrades, parapets, and other non-enclosing wall elements may not require thermal breaks, except where the possibility of high thermal heat transfer exists through the steel sections to the main structural steel element of the building.

Thermal breaks are required to have an R value of R0.2 in order to meet the NCC requirement for a Thermal Break.



Bushfire and Boundary Wall Areas

AS3959 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).

Duragroove[™] is eminently suited for both bushfire and boundary wall applications in residential and multi-residential buildings.

Bushfire AS3959:2018 Applications

Duragroove[™] 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.

Duragroove[™] when used in conjunction with GTEK[™] Fire and Wet Area 16mm will comply with the requirements of AS3959 and AS1530.4 to achieve BAL FZ>10.

Boundary/Exterior Walls

Duragroove™ in conjunction with GTEK™ Fire and Wet Area 16mm can achieve both 60/60/60 and 90/90/90 FRL fire ratings from the outside as required by the NCC.

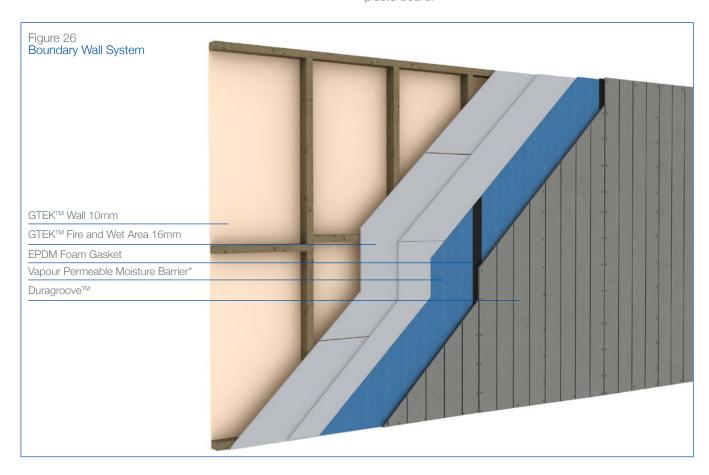
In timber and steel frame applications where an exterior wall is required to achieve 60/60/60 FRL, 1 layer of GTEK™ Fire and Wet Area 16mm, installed with the Duragroove™ to the outside walls as we as well as GTEK Wall 10mm on the inside will achieve this result.

Similarly, 2 layers of GTEK™ Fire and Wet Area 16mm used in conjunction with Duragroove™ will achieve 90/90/90 from the outside on both timber and steel frame.

NOTE: All exterior walls must have vapour permeable moisture barrier directly behind the DuragrooveTM.

No adhesives are to be used when installing GTEK $^{\text{TM}}$ Fire and Wet Area 16mm and the Duragroove $^{\text{TM}}$ Nails or screws must be used.

For more infromation please contact the technical team on 1300 652 242 or contact us through our website. Refer to GTEKTM Fire and Acoustic Guide for installation of fire rated plasterboard.







Painting

To enhance both the appearance and performance of DuragrooveTM, we recommend that at least two coats of 100% acrylic exterior grade paint be applied. The paint manufacturer's recommendation on application and maintenance of the paint system should be followed.

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

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

Ensure that $Duragroove^{TM}$ is dry and clean prior to applying a quality exterior paint system.

Gloss paint finishes are not recommended.

Note: we recommend the use of a roller or brush appliction for best results.

Maintenance

Duragroove $^{\!\top\!\! M}$ when used in accordance with this literature requires no direct maintenance.

To guard against water penetrating the structure and damaging the framework, annual inspections of the cladding system should be carried out. Check flashing, sealant joints and paint work.

Flashings and sealants must continue to perform their design function.

Damaged sheets should be replaced as originally installed. Paintwork should be maintained in accordance with the manufacturer's instructions.

Deemed to Comply

The NT Deemed to Comply Manual (DTCM) is referenced in the NCC Volume 2 Part H7D1 - Deemed to Satisfy Provisions as an acceptable construction manual for high wind areas.

Duragroove[™] is suitable to be used in high wind environments and is Deemed to Comply - M-375-01

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

Warranty

Please refer to innovafibrecement.com.au for detailed warranty information

Notes	
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BrisbaneTelephone
07 3548 8400

Melbourne Telephone 03 9492 1700

Perth Telephone 08 9311 5500 Sydney Telephone 02 8107 9500

New Zealand Telephone 0011 64 9273 1457

Technical help line 1300 652 242 f /InnovaBuildingSystems ⊚ @innovabuildingsystems ☐ /Innova Building Systems



innovafibrecement.com.au



