

# Impactwall

Commitment To Sustainable Construction



[www.usgboral.com](http://www.usgboral.com)

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Boral Plasterboard (Malaysia) Sdn Bhd doing business as USG Boral Singapore



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**Green Building With  
Boral Impactwall**



**Advantages of Boral Impactwall**

	<b>Superior Acoustical Performance Value - STC 50+</b>		<b>Fast Installation</b>
	<b>Light weight material</b>		<b>100% Dry Construction</b>
	<b>Lower cost</b>		<b>High BS Score - Index 1</b>
	<b>Fire Rating 1 or 2 hours</b>		

**Tests & Certification**

Boral Impactwall has been tested to the following standards.

Standards	Description
BS 476 Part 4: 1970	Non-Combustibility
BS 476 Part 22: 1987	Determination of the Fire resistance of Non-loading Bearing Elements Of Construction-determination of the Fire Resistance of Partition.
BS 5234 Part 2: 1992	Specification Performance Requirements for Strengths and Robustness.
ASTM E90 - 97	Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions & Elements.

Boral Impactwall System has obtained Certificate of Conformity by PSB and is also listed as Class 1A under PSB Product Listing Scheme.

For test report references, please contact our representative staff for more information.

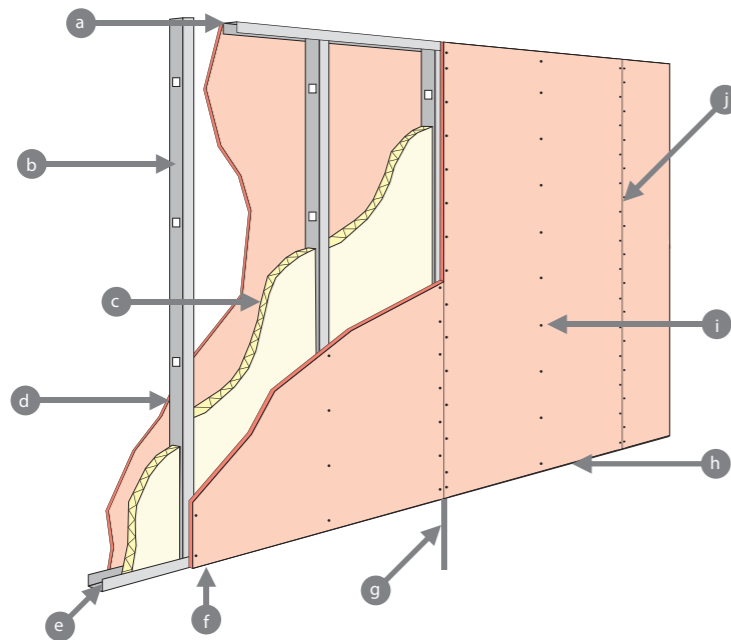
**Wall Data Comparison by Functional Requirements**

	Precasts Panel	Brick	Boral Impactwall 1 Hour	Boral Impactwall 2 Hour
<b>Weight</b>	420kg /3m	900kg /3m	113kg /3m	144kg /3m
<b>Thickness</b>	100mm	100mm	102mm	134mm
<b>Productivity</b>	18 - 23 m <sup>2</sup> / man day	4 - 7 m <sup>2</sup> / man day	25 m <sup>2</sup> / man day	20 m <sup>2</sup> / man day
<b>Sound Insulation</b>	41 dB	35 - 40 dB	50 dB	55 dB
<b>Fire Resistance Rating</b>	1 Hour	2 Hour	1 Hour	2 Hour
<b>Non - Combustibility</b>	Pass	Pass	Pass	Pass
<b>On Site Installation Of Concealed Wiring,Ducting &amp; Pipe work</b>	During Installation of wall, services can be run through wall cell. After installation of wall, wall surface can be chased & avoid within wall filled with packing material.	By surface hacking	By fitting services before covering the face of the wall	By fitting services before covering the face of the wall
<b>Surface Appearance</b>	Smooth, with 3mm of skim coat	Smooth, only with skilled plasterers	Very smooth. No skim coat required	Very smooth. No skim coat required
<b>Applied Finishes Tiling</b>	Yes	Yes	Yes	Yes
<b>Joint Treatment</b>	Cementitious joint compound is applied between abutting panels. When dry, joint is tooled to form a 3mm groove & applied with a finishing compound	Not Applicable	Paper tape is used to seal joint, followed by application of joint compound.	Paper tape is used to seal joint, followed by application of joint compound.
<b>Fasteners Type</b>	Cavity Anchors	Plastic Plug, Chemical Anchors, Impact Anchors	Cavity Anchors, Gypsum Screws	Cavity Anchors, Gypsum Screws
<b>Flexibility of Relocation</b>	Can be removed & replaced with relative ease & minimal mess.	Removal & replacement very messy due to hacking & wet trade	Removal & replacement fast & easy.	Removal & replacement fast & easy.

**The Boral Impactwall System - 1 Hour**

The Impactwall is designed to withstand impact from various objects and has a one hour fire resistance rating. The Impactwall can also be customized to cater to your preferred wall thickness and acoustic performance. This system, however, is a non - load bearing system.

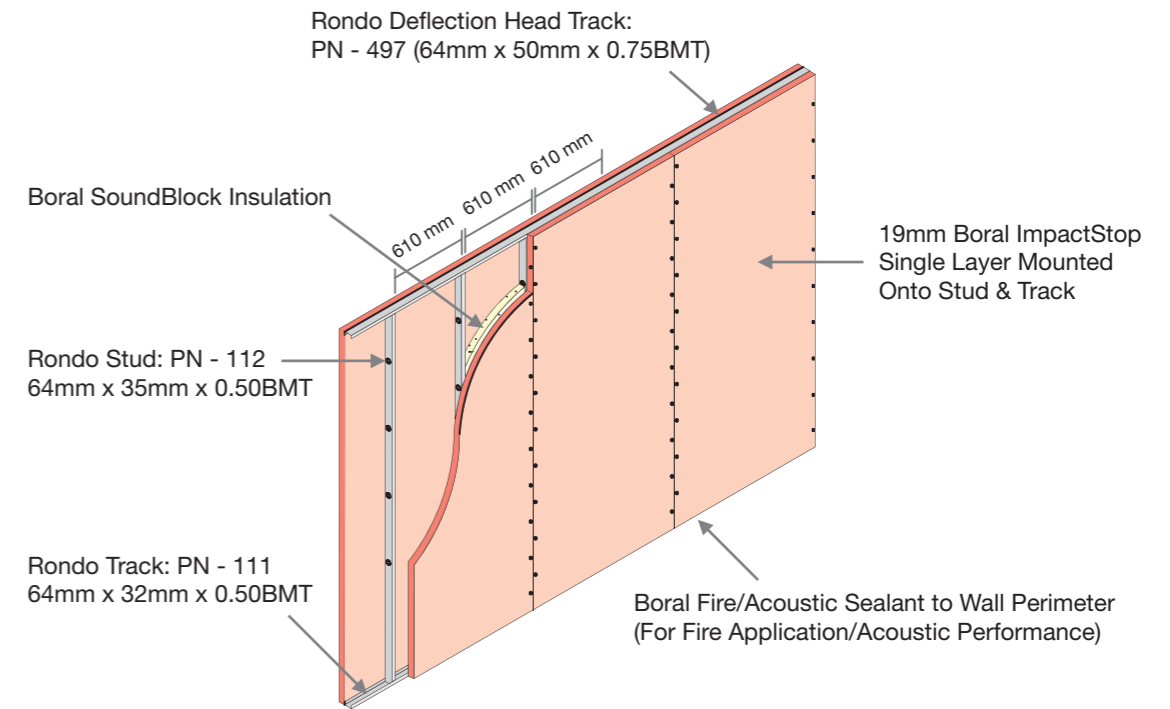
**System Overview**



\* Do not fasten plasterboard to top and bottom track

a	Rondo 64mm x 0.75BMT Deflection Head track
b	Rondo 64mm x 0.50BMT Zinalum Stud @ 610mm c/c
c	Boral SoundBlock Acoustic Insulation
d	1 layer "Green Label" certified Boral 19mm Impactstop - fix to both sides of Stud Framing.
e	Rondo 64mm Bottom Track.
f	Allow a gap of 8mm between Boral Plasterboard and the Perimeter Walls. It is to be filled using approved Boral Fire/Acoustic Sealant <b>IF FIRE RATING/ACOUSTIC IS REQUIRED.</b>
g	Fasteners @ 200mm centres max. on edges staggered
h	Fasteners 10mm - 16mm from edges of sheet
i	Fasteners @ 300mm centres max. in field of plasterboard
j	Joints and fasteners to be finished with Boral Jointing Compound

**Boral 102mm Impactwall - STC Rating: 50**



**Limiting Height 1 Hour Impactwall**

Limiting Height mm (Max)	Limiting Height mm (Max)			
	0.25kPa	Width (mm)	Studs (mm)	Studs (B.M.T) (mm)
3910d	102	64	0.50	
4350d	102	64	0.75	
4520d	102	64	1.15	
4300d	115	76	0.55	
5250d	115	76	0.75	
5420d	115	76	1.15	

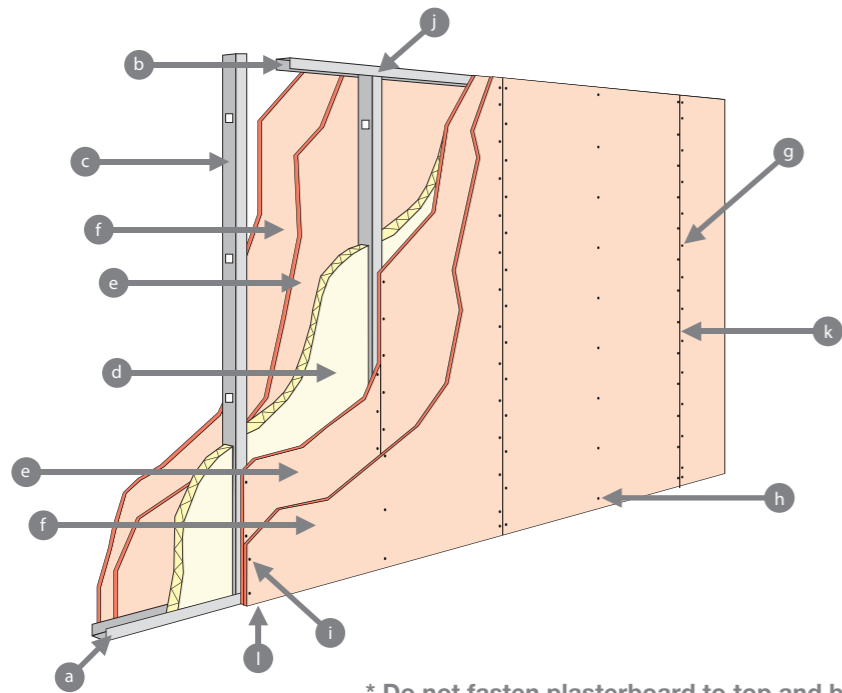
NOGGED = PLEASE REFER TO MANUFACTURER FOR NO. OF NOGGINGS REQUIRED.

Limiting heights shown are the lesser of Fire Height (f without pressure) and Structural Limiting Height (in a non fire environment) at 0.25kPa governed by Deflection I/240 (d), Strength (s) or End Reaction (r). End reaction refers to the manner in which the stud is retained in the top and bottom track, i.e. friction fit or rigidly fixed. Where systems will be required to resist air pressure or other loadings during fire services, refer to Boral for limiting height information. Midspan Nogging is recommended for erection purposes in walls higher than 3600mm.

**The Boral Impactwall System - 2 Hour**

The Impactwall is designed to withstand impact from various objects and has a two hour fire resistance rating. The Impactwall can also be customized to cater to your preferred wall thickness and acoustic performance. This system, however, is a non - load bearing system.

**System Overview**



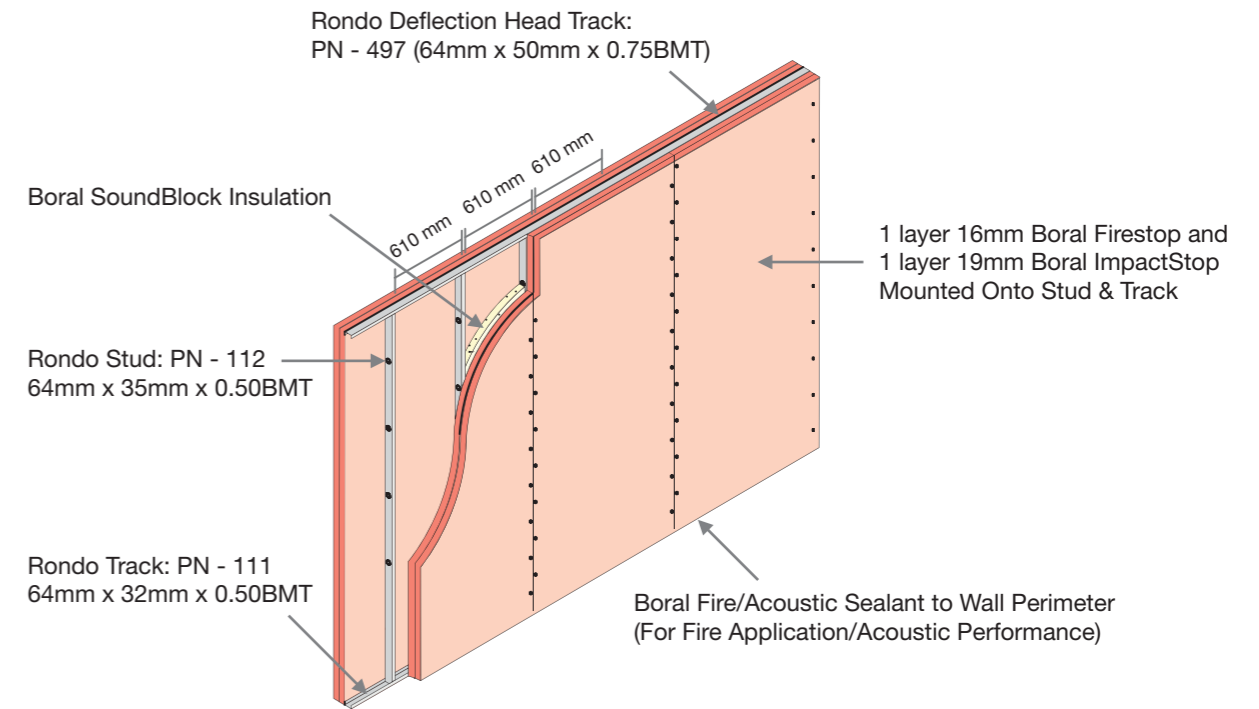
\* Do not fasten plasterboard to top and bottom track

a	Rondo 64mm x 33mm x 0.50BMT Bottom track
b	Rondo 64mm x 33mm x 0.75BMT Deflection Head track
c	Rondo 64mm x 32mm x 0.50BMT steel stud @ 610mm centres max.
d	70mm thick 14kg/m <sup>3</sup> Boral SoundBlock Acoustic Insulation
e	1 layer Boral Firestop 16mm thick
f	1 layer Boral Impactstop 19mm thick
g	25mm Type 1 Needle Point screw @ 200mm max. centers on edges, staggered
h	25mm Type 1 Needle Point screw @ 300mm max. centers in field of plasterboard
i	Screws 10mm to 15mm from edge of sheet
j	6mm Dynabolts at 610mm centers max.
k	Board joints to be finished with 50mm paper tape and Boral Jointing Compound
l	Gap at wall perimeter to be sealed with Boral Fire Sealant

**Note:**

Board joints to be staggered 610mm max. with joints on opposite face.  
For second layer use 45mm screws.

**Boral 134mm Impactwall - STC Rating: 55**



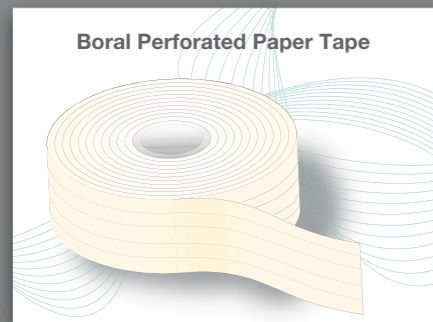
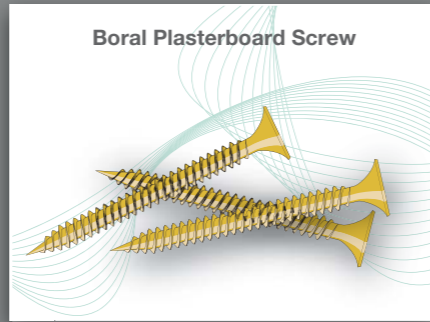
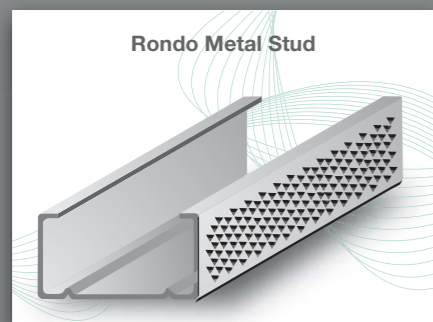
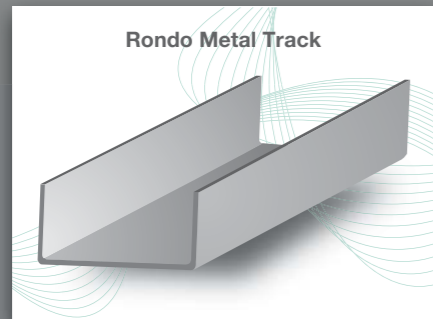
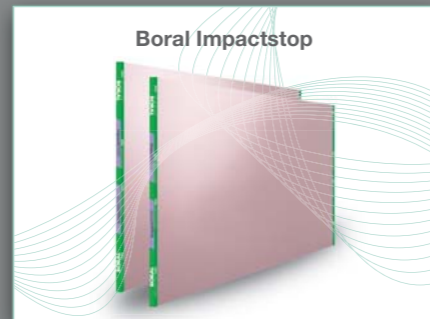
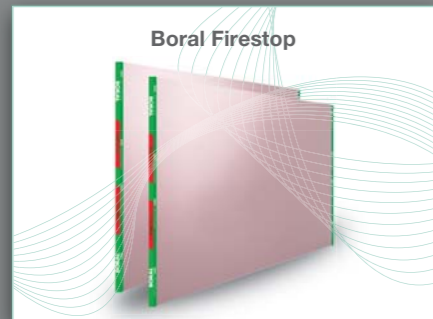
**Limiting Height 2 Hour Impactwall**

Limiting Height mm (Max)	Width (mm)	Studs (mm)	Studs (B.M.T) (mm)
0.25kPa			
3910d	134	64	0.50
4350d	134	64	0.75
4520d	134	64	1.15
4300d	146	76	0.55
5250d	146	76	0.75
5420d	146	76	1.15

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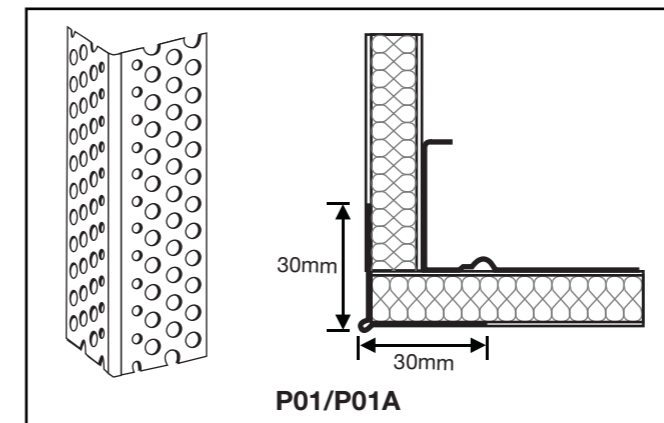
System Components



Finishing Sections

Perforated Sections

Perforated corner beads were first produced by Rondo Exangle in 1964. However, many products within the Exangle range have undertaken design changes in recent years, so as to perform better with changing trade requirements and improved setting compounds. Again, these sections were designed for general domestic and commercial applications where cost is a factor.



Perforated Sections & Details

	Approx Weight Per Lineal Metre ( kg )	Material Thickness ( EMT )	STD Lengths (Metres)
P01	0.155	0.35	3.4, 2.7, 3.0, 3.6, SA Only: 1.82, 2.12, 2.42
P01A	0.155	0.33	2.4, 2.7, 3.0, 3.6
P10	0.147	0.35	3

Stopping Angles & Beads

Stopping Angles

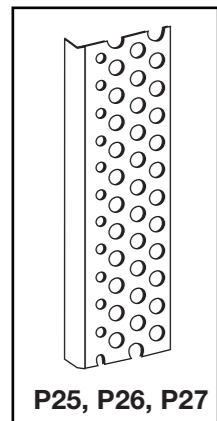
P25 - 10mm leg, P26 - 13mm leg, P27 - 16mm leg

The Rondo stopping angles have a perforated, recessed edge and are used where the edge of the building board is not exposed, and where the fitting of a stopping bead would be difficult. The Stopping Angle is fixed to the sheet of building board with an adhesive or staples, with the finishing coats bonding into the building board and feathering up to the bead nib. Ideal for use around door jambs, however, in this application it is recommended that when using building board up to 10mm thick, a P25 should be used so that the leg will slot into the door jamb as shown. Similarly, when using 13mm board, P26 should be used.

Shadowline Stopping Angles

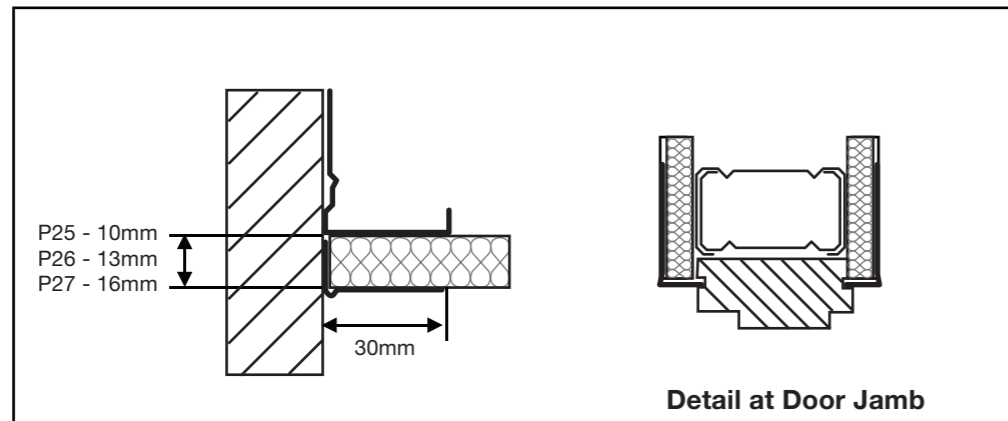
P50 - 10 x 10mm for 10/13/16mm board, P60 - 10 x 6mm for 6mm board

The Shadowline stopping angle is the professionals section for minimizing the appearance of 'out of align' walls and ceilings by giving a clean, straight, shadow edge after setting. Shadowline Stopping Angle are suitable for vertical, horizontal and curved applications, and are ideally suitable for use around door jambs and lift wells.



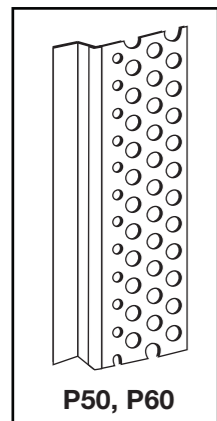
P25, P26, P27

Stopping Angle



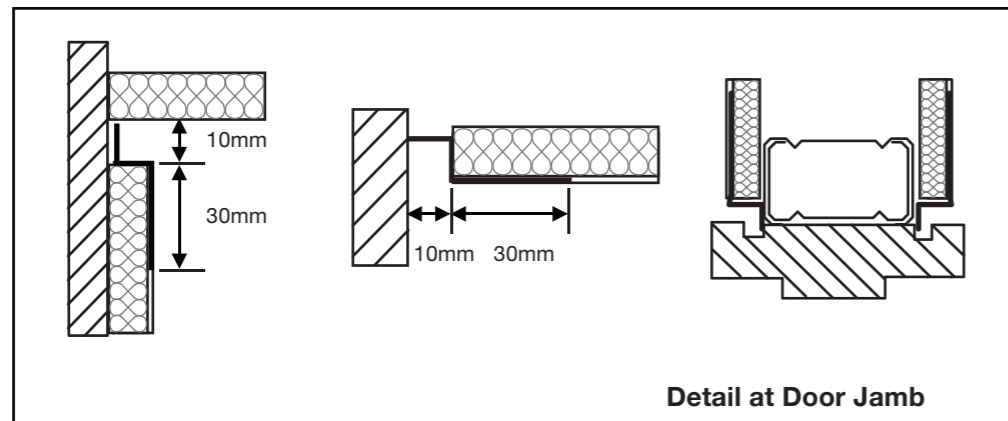
Stopping Angle: Detail at Door Jamb

Detail at Door Jamb



P50, P60

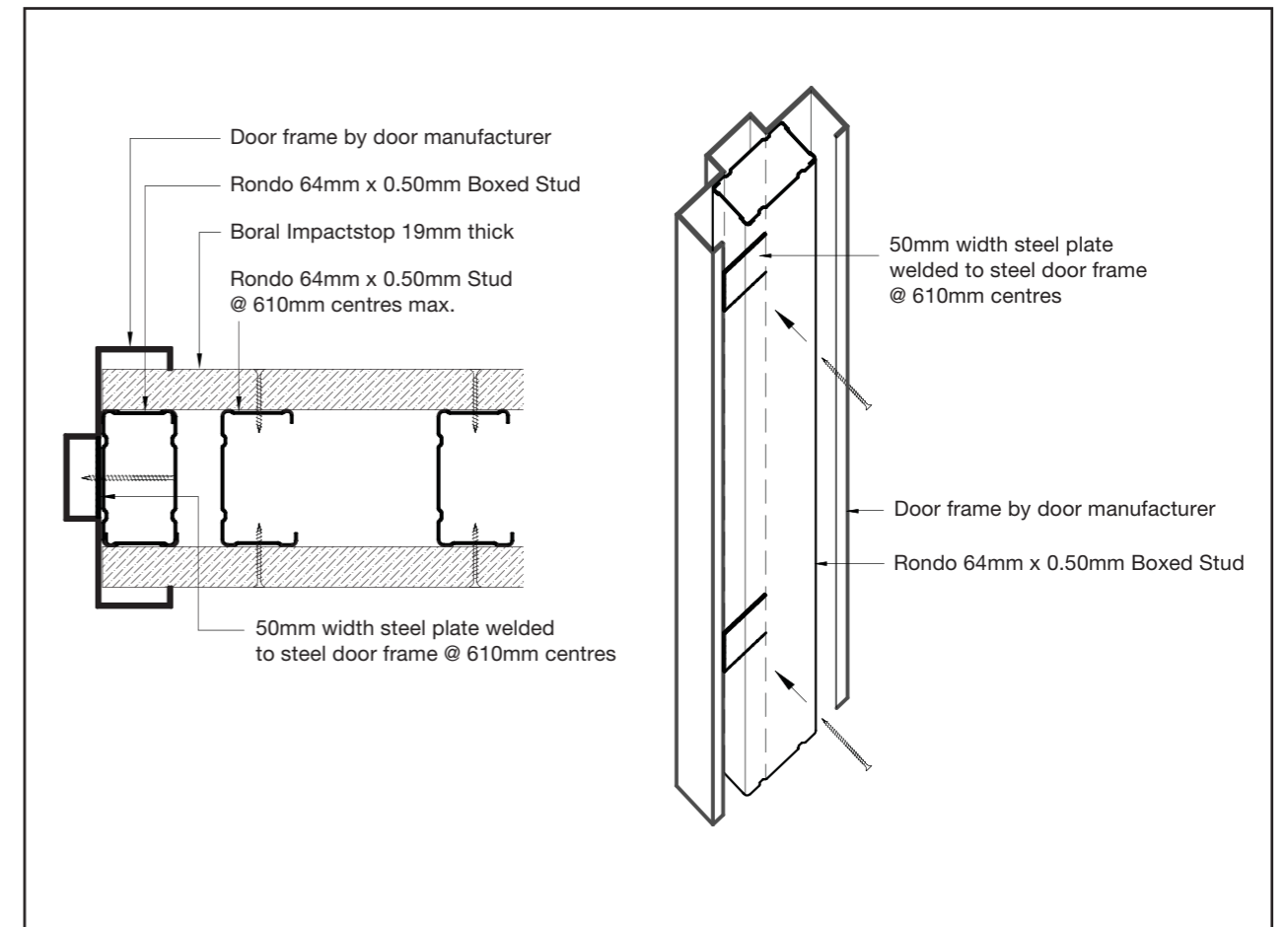
Shadowline Stopping Angle



Shadowline Stopping Angle: Detail at Door Jamb (Timber Door Frame)

Detail at Door Jamb

Detail At Door Jamb (Steel Door Frame)



50mm width steel plate welded to steel door frame @ 610mm centres

Door frame by door manufacturer

Rondo 64mm x 0.50mm Boxed Stud

50mm width steel plate welded to steel door frame @ 610mm centres

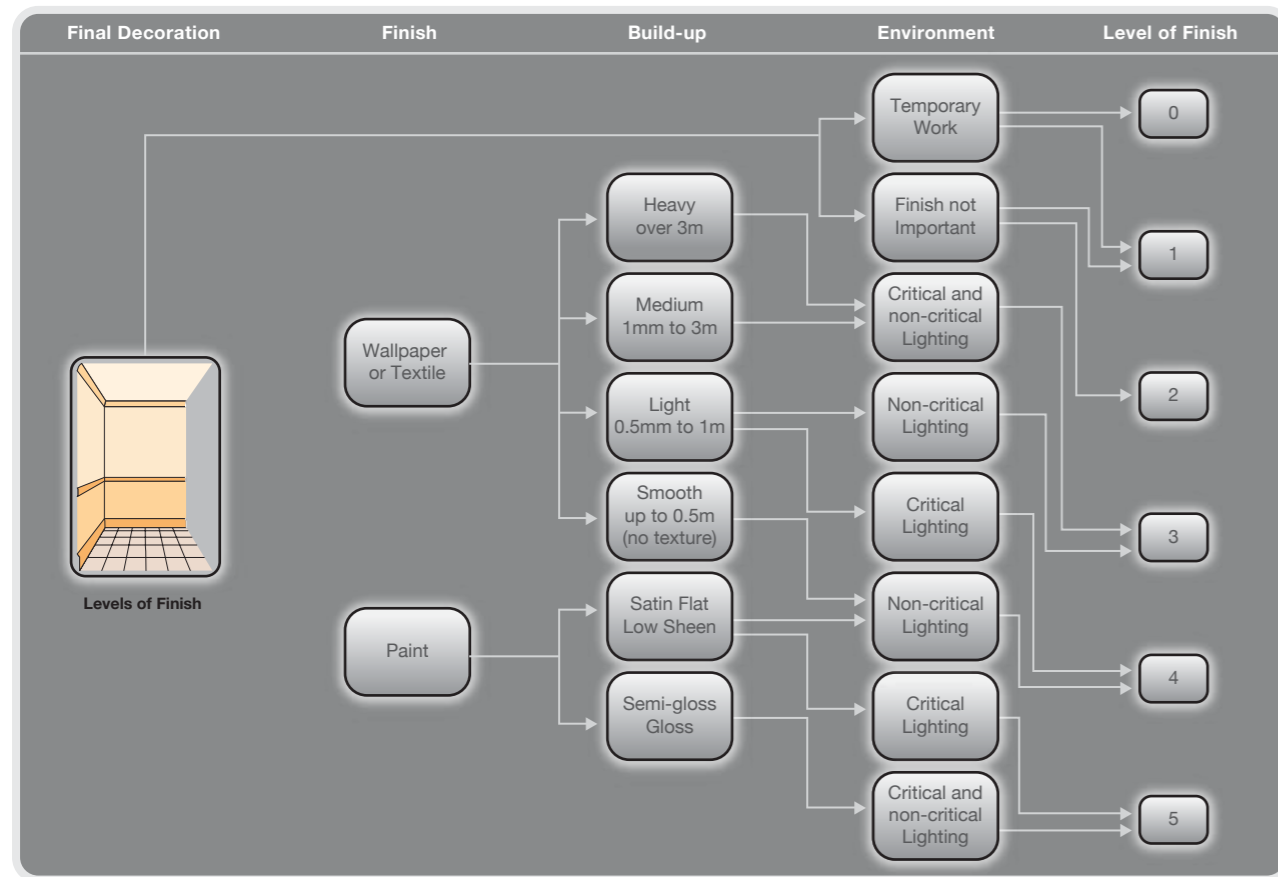
**Determining Levels of Finish**

The term 'Level of Finish' refers to the quality of finish required for plasterboard clad walls and ceilings.

There are six Levels of Finish (0-5) outlined in the Australian Standard AS/NZS 2589.1:1997 Gypsum Linings in Residential and Light Commercial Construction – Application and Finishing. Part 1 Gypsum Plasterboard.

The desired Level of Finish should be determined at the design stage as each Level has specific:

- frame tolerances
- plasterboard fixing and finishing requirements
- methods of jointing
- stopping requirements
- corner/angle accessories.



Reference: AS/NZ S 2589.1:1997 Gypsum lining in residential and light commercial construction application and finishing

**Level 0**

This Level may be useful for temporary construction where there is no requirement for stopping, taping, finishing, or accessories. The installation only involves gluing and screwing/ nailing plasterboard sheets into place.

**Level 1**

Used in concealed applications such as plenum areas above ceilings and building service corridors. All joints and interior angles have tape embedded in the joint compound. The surface is to be free of excess joint compound, and tool marks and ridges are generally acceptable.

**Level 2**

Level 2 is suitable for storage areas where surface appearance is not of primary concern. All joints and interior angles shall have tape embedded in the joint compound. Apply one separate coat of joint compound over all joints and fastener heads. The surface should be free of excess joint compound. Some minor tool marks and visible edges are acceptable.

**Level 3**

Suitable for surfaces intended to have sprayed or hand-applied heavy or medium texture finishes and where heavy wall covering is the desired final decoration. All joints and interior angles shall have tape embedded in the joint compound. Apply one separate coat of joint compound over all joints and fastener heads. The joint compound shall be left with a smooth finish by scraping off nibs and ridges with the edge of a trowel.

**Level 4**

Level 4 is the accepted level of finish for domestic construction. It is particularly useful where lighting shines on light textures, light wall coverings and smooth textured finishes. It is also used where smooth textured finishes and satin/flat/low sheen paints are illuminated by non-critical lighting. Flat paints in this situation help to conceal joints.

Carefully evaluate weight, texture, and sheen level of wall coverings. Conceal all joints adequately if wall covering material is lightweight, glossy, or lightly patterned, or any combination of these.

All joints and interior angles shall be taped and finished with three coats of jointing material. Ensure the joint compound is left smooth and free of tool marks and ridges.

**Level 5**

Is used where gloss or semi-gloss paints are specified and where critical lighting affects satin, flat, or low sheen paints. All joints and interior angles shall have tape embedded in the joint compound. Apply a minimum of two separate coats of joint compound over all joints, angles, fastener heads, and accessories. Ensure the joint compound is left smooth and free of tool marks and ridges.

Complete the work with proprietary surface preparations or, if required, skim coat to remove differential surface textures and porosity.

**Note:**

1. Substrate framing should be carefully inspected before plastering commences to ensure that it is acceptable to the installer. Once the installer accepts the framing, he or she becomes fully responsible for the level of finish of the plaster board surface.
2. Residential Level 4 constructions with paint finish should not be subjected to critical glancing light.
3. We recommend consultants/architects to specify the Level of finish required during the design phase.



# How Do I Specify Boral Impactwall?

Designed for Strength, Engineered for Performance

## BQ Write - Up

1 Hour - 102mm thick approved **BORAL IMPACTWALL** comprising of one layer of “Green Label” **Certified 19mm Impactstop** on both sides screw fixed onto Rondo 64mm X 35mm x 0.50mm BMT Zinalum steel stud (P/N 112) at 610mm centres with 64mm X 50mm X 0.75mm BMT Zinalum deflection head track fixed onto soffit and 64mm X 32mm X 0.50mm BMT Zinalum bottom track (P/N 111) fixed onto floor. Boards surface to be flushed finished and perimeter of wall to be sealed with **approved Fire/Acoustic Sealant – ONLY FOR FIRE RATING / ACOUSTIC PERFORMANCE REQUIREMENT** all fixed in accordance to manufacturer’s instruction and recommendation.

2 Hour - 134mm thick approved **BORAL IMPACTWALL** comprising of one layer of “Green Label” **Certified 19mm Impactstop** and one layer of **16mm Firestop** on both sides screw fixed onto Rondo 64mm X 35mm x 0.50mm BMT Zinalum steel stud (P/N 112) at 610mm centres with 64mm X 50mm X 0.75mm BMT Zinalum deflection head track fixed onto soffit and 64mm X 32mm X 0.50mm BMT Zinalum bottom track (P/N 111) fixed onto floor. Boards surface to be flushed finished and perimeter of wall to be sealed with approved Fire/Acoustic Sealant – **ONLY FOR FIRE RATING / ACOUSTIC PERFORMANCE REQUIREMENT** all fixed in accordance to manufacturer’s instruction and recommendation.

## Architectural Specification

### Partition Framing - Rondo

Studs (P/N 112) - Steel Studs, non-load bearing Rondo “CS” type studs roll formed from 0.50mm BMT (Base Metal Thickness), hot Zinalume coated steel (275 grams per msq galvanizing) as supplied by Rondo Building Services. Punch out 25mm diameter @ 610mm centres provided for installation of services. Flanges are knurled to prevent screw slippage. Stud is supplied in minimum 3.0m lengths.

Stud width: 64mm, 76mm, 92mm  
Stud depth: 35mm

**Top and bottom track (runner)** P/N 497/111 – Deflection Head Track / Bottom Track, roll formed from 0.75/0.55mm BMT (Base Metal Thickness), hot Zinalume coated steel (275 grams per msq galvanizing) as supplied by Rondo Building Services. Flanges are angled at 8 degrees to provide friction fit to hold studs in place, tracks to be supplied in minimum 2.75m lengths.

Track width: 64mm, 76mm, 92mm      Track width: 64mm, 76mm, 92mm  
Track depth: 32mm                              Track depth: 50mm

- Use Only Boral Fire/Acoustic Rated Sealant WHEN FIRE RATING/ ACOUSTIC PERFORMANCE IS REQUIRED!

### Installation

- Partition layout should be marked accurately, checking individual measurements against overall dimension.
- Bottom and top track should be fastened to structural elements at 50mm in from each end of the track and spaced at 610mm centres max. with suitable masonry fastener (eg. Power actuated shot, nylon anchor or expanding anchor).
- Position studs vertically with open sides facing the same direction, engaging the top and bottom track, and spaced @ 610mm centres max.
- For partition heights up to 3000mm, cut studs 16mm short of the floor-to-ceiling height to allow 16mm expansion gap at top of studs.
- Allow an additional 5mm deflection gap for every 1000mm after 3000mm.
- Studs are not to be fastened to top and bottom tracks, except boxed studs facing fire - door openings, which are pop-riveted to the tracks.



**Cavity Insulation** (if required) - Install BORAL SoundBlock insulation in wall cavity, cut neatly between studs to ensure no gaps and/or crushing of the insulation. (Please refer to the Acoustic Selector for other STC Ratings available).

**\*ALL PARTITIONS FRAMING SHOULD BE FIXED ACCORDING TO THE PLASTERBOARD MANUFACTURER'S**

SPECIFICATIONS.

## Plasterboard Installation

**Materials – “Green Label” Certified Boral 19mm Impactstop** shall conform to BS 476 Part 4: 1970 and BS 1230 Part 1 (Specification for Plasterboard) thickness 19.0mm, 1220mm wide and maximum length, tapered edges as supplied by Boral. To be identified by pinkish face on decorative side and shall carry compliance to BS 476 Non Combustible Part 4 listing from Singapore Productivity and Standards Board.

**Delivery, storage and cutting** - Plasterboard should be delivered to site immediately prior to installation to reduce the incidence of damage. All materials should be kept dry, stored in neat, flat stacks to avoid damage to ends and edges or warping. Plasterboard should be cut by scoring the liner board on the face side or cut with a panel saw. Snap away from the cut face and cut back liner neatly to ensure no tearing or peeling occurs.

### Installation

- Check partition framing to ensure that it is plumb, level and square and in true alignment before installation of plasterboard sheets.
- Boral 19mm Impactstop sheets are always installed vertically.
- Boral 19mm Impactstop sheets are cut 16mm short, allowing for 10mm deflection to floor and ceiling.
- Position temporary 9mm plasterboard off cuts between the floor and bottom of sheet prior to fixing.
- All gaps are to be sealed using Fire Rated Sealant or Cornice Adhesive.

First side - Screw fasten Boral 19mm Impactstop vertically to studs at edges only, centering abutting edges on stud flanges. Sheets should be installed by advancing in the direction opposite to the stud flange direction.

**\* NOTE: All butt joints are to be staggered.**

Second side - Cut first sheet of Boral 19mm Impactstop 610mm wide to stagger joints to first side. Screw fasten this sheet and all subsequent full width sheets to all studs. Return to first side and screw fasten Boral 19mm Impactstop sheets to previously unattached studs.

**\* NOTE: All butt joints are to be staggered.**

**Fixing requirements** - Boral Plasterboard Type S 30mm screws should be spaced in the body of the sheet on every stud at 300mm centres max. Space screws at 200mm centres max. on internal and external angles, sheets ends and edges, and at 300 centres max. around openings. Screws should be spaced not less than 10mm or more than 16mm from edges and ends of plasterboard sheets.

Ensure that plasterboard sheets are not fixed to Deflection Head track. Do not join plasterboard over doors or over/under windows.

**Jointing system** - To achieve the best results, it is recommended that the BORAL three - coat jointing system to be used for jointing, using perforated paper tape.

### First coat

- Evenly fill the joint recess formed by the tapered edges of the board using Boral Ready-Mixed Jointing Compound.
- Centre the 50mm perforated paper tape along the joint, and by using a broad knife press the tape down into the joint compound to remove excess plaster and any air bubbles sandwiched beneath the tape.
- Leave sufficient joint compound under the tape to achieve a good bond. Immediately apply a skim coat of Boral Jointing Compound to reduce the possibility of the tape edge from curling or wrinkling.
- Coat all screw heads with Boral Jointing Compound. Allow setting for at least 60 minutes before applying second coat.

### Second coat

- Apply a second coat of Boral Jointing Compound.
- This coat should be feathered at least 50mm beyond the edges of the first coat.
- Coat screw heads with a second coat.

### Finishing coat

- When the second coat has set, scrape back any build up of compound along the joint to give a smooth and level surface.
- Apply a finish coat using Boral Jointing Compound.
- Joint edges should be feathered at least 50mm beyond the edges of the second coat.
- Apply a finishing coat to screw heads, which should overlap second coat by 25mm.
- When thoroughly dry, sand lightly to a smooth finish using a 220 or 150 grit sand paper.

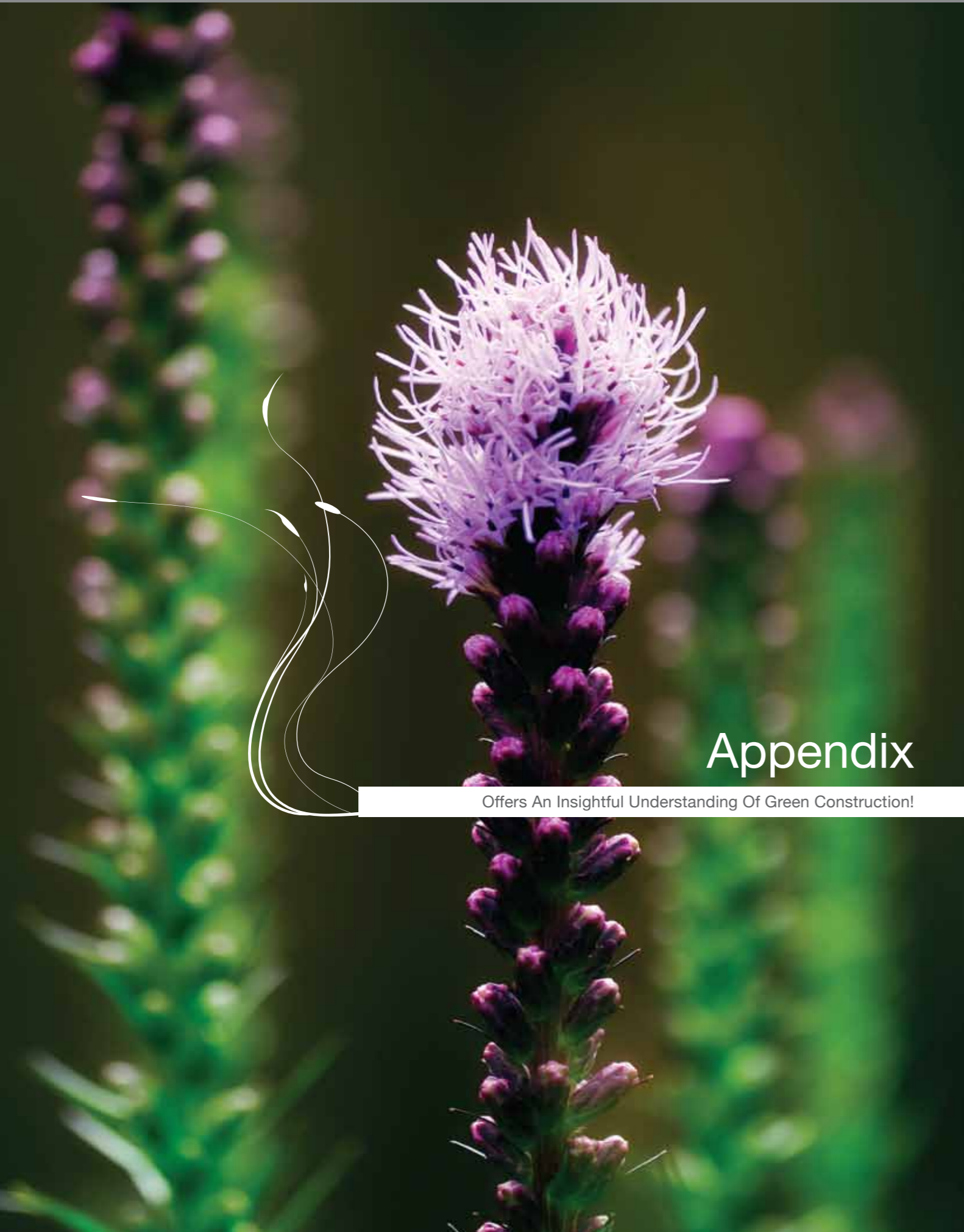
**Internal corners** - Gaps in excess of 4mm should be filled using Cornice Adhesive or Boral Jointing Compound, and allowed to set. Measure and cut Perforated Paper Tape and fold along its centering. Apply a base coat of Boral Jointing Compound to both sides of angle and bed perforated paper tape into the joint compound ensuring all excess Boral Jointing Compound and any air bubbles are removed. When dry apply Boral Jointing Compound with a 100mm corner tool ensuring edges are feathered and evenly coated. When thoroughly dry, sand lightly.

**External corners** - Fix Rondo External Corner Bead (P/N 01), with Boral Plasterboard Type S screws at 300mm centres. Apply three coats of Boral Jointing Compound, as previously described. When thoroughly dry, sand lightly.

**Expansion joints** - In long unbroken partition or wall runs, install Rondo Expansion Joint (P/N 35) at centres maximum of 9.0m. Fixing and jointing as per 'External Corner' application.

**Stopping angles** - Where plasterboard linings abut dissimilar surfaces i.e reinforced concrete, install Rondo Stopping Angle (P/N 27), fixed and coated as per 'External Angle' instructions.

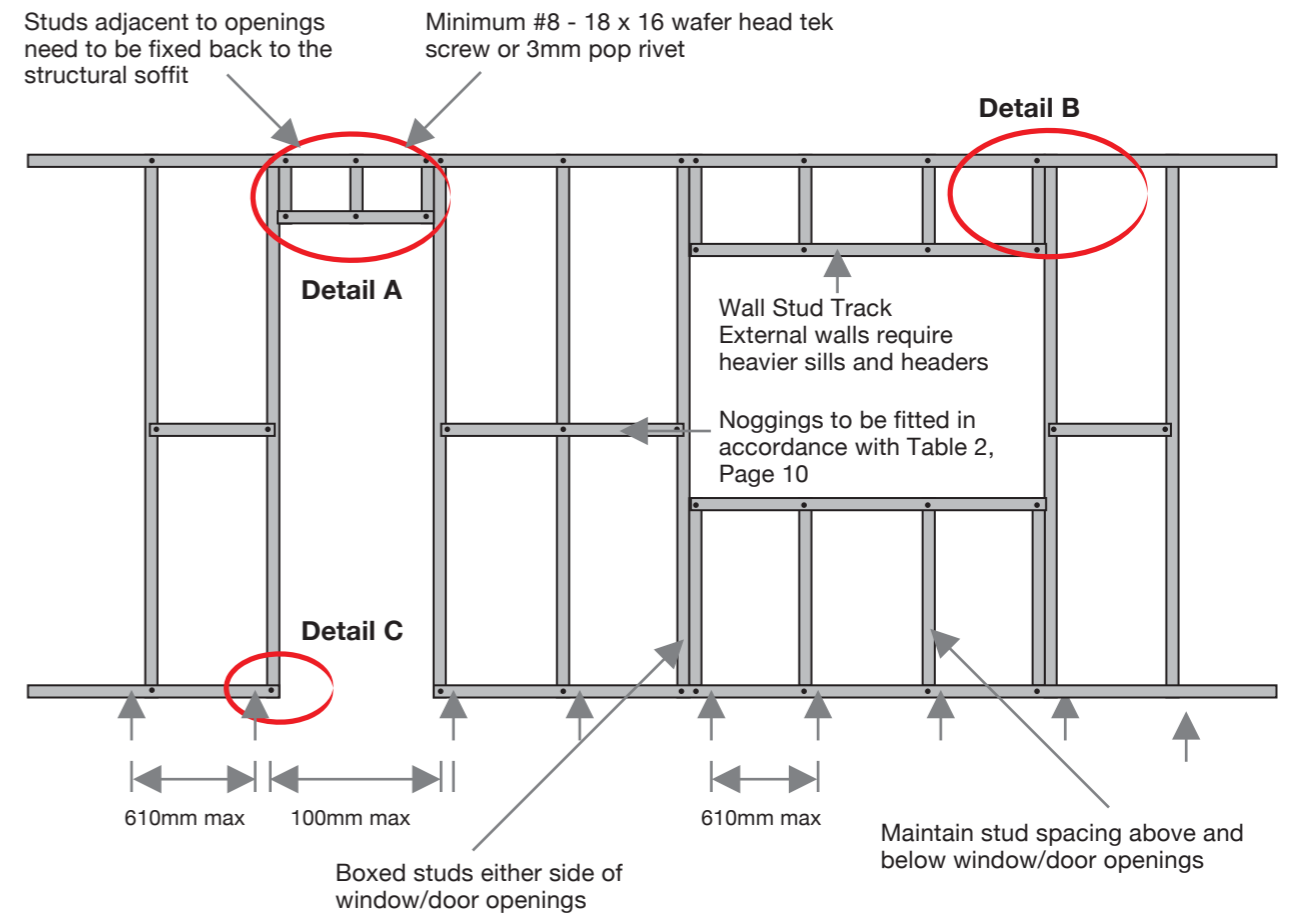
**Nogging** - Nogging are required as headers above doorways, for reinforcement behind fixture attachments and where special circumstances require additional stiffening of the frame. Nogging are formed from lengths of steel track approximately 100mm longer than the stud spacing. Cut the track flanges at approximately 45 degrees and bend the track ends at right angles to fit between the studs. Position and fasten with stud crimper or as is necessary for fire door application, with pop rivets.



# Appendix

Offers An Insightful Understanding Of Green Construction!

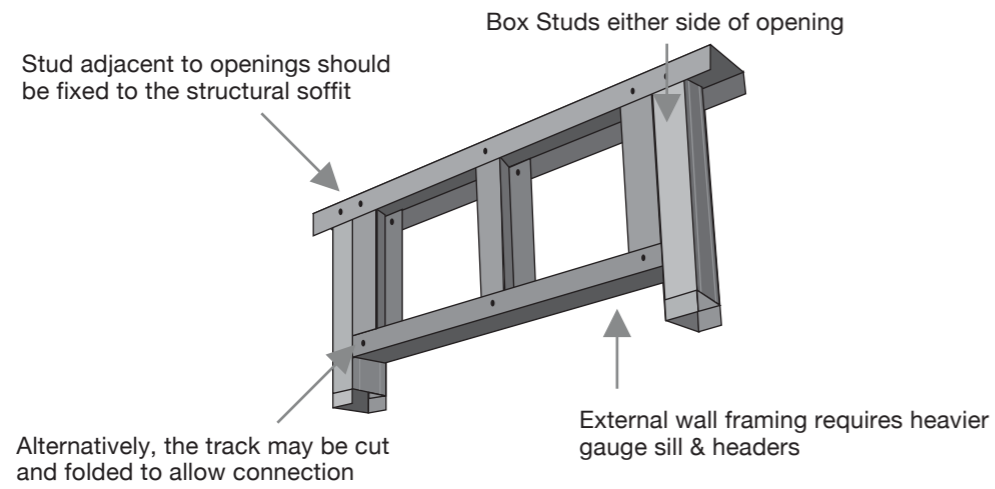
## Door Detail



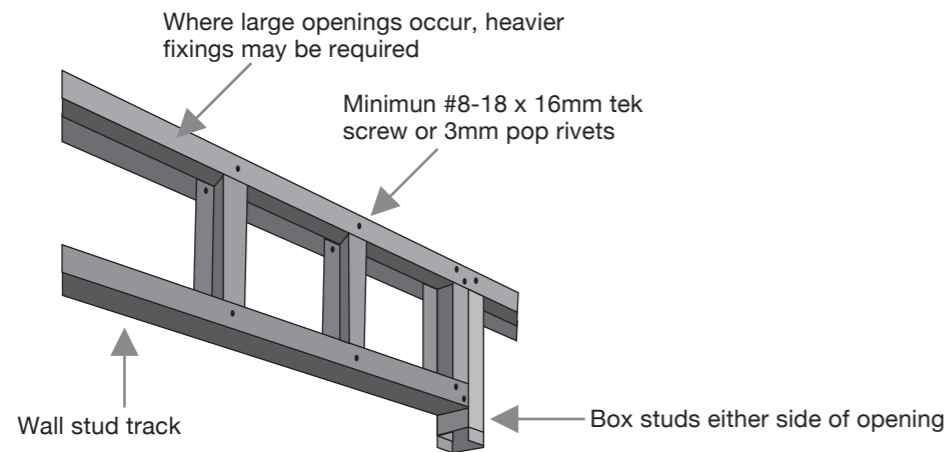
**Note:** Track fixing are to be selected based on loading and substance

Door Detail

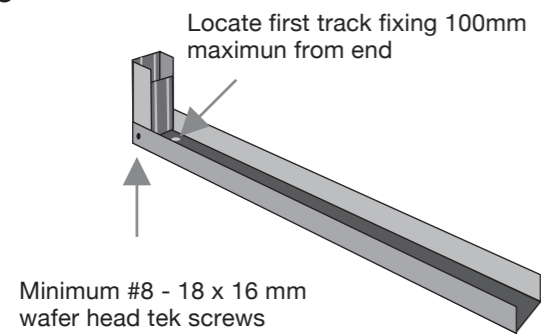
Detail A



Detail B

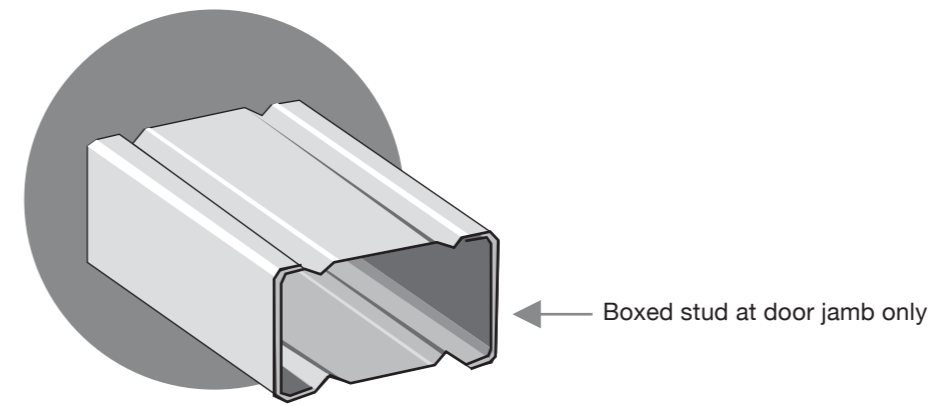
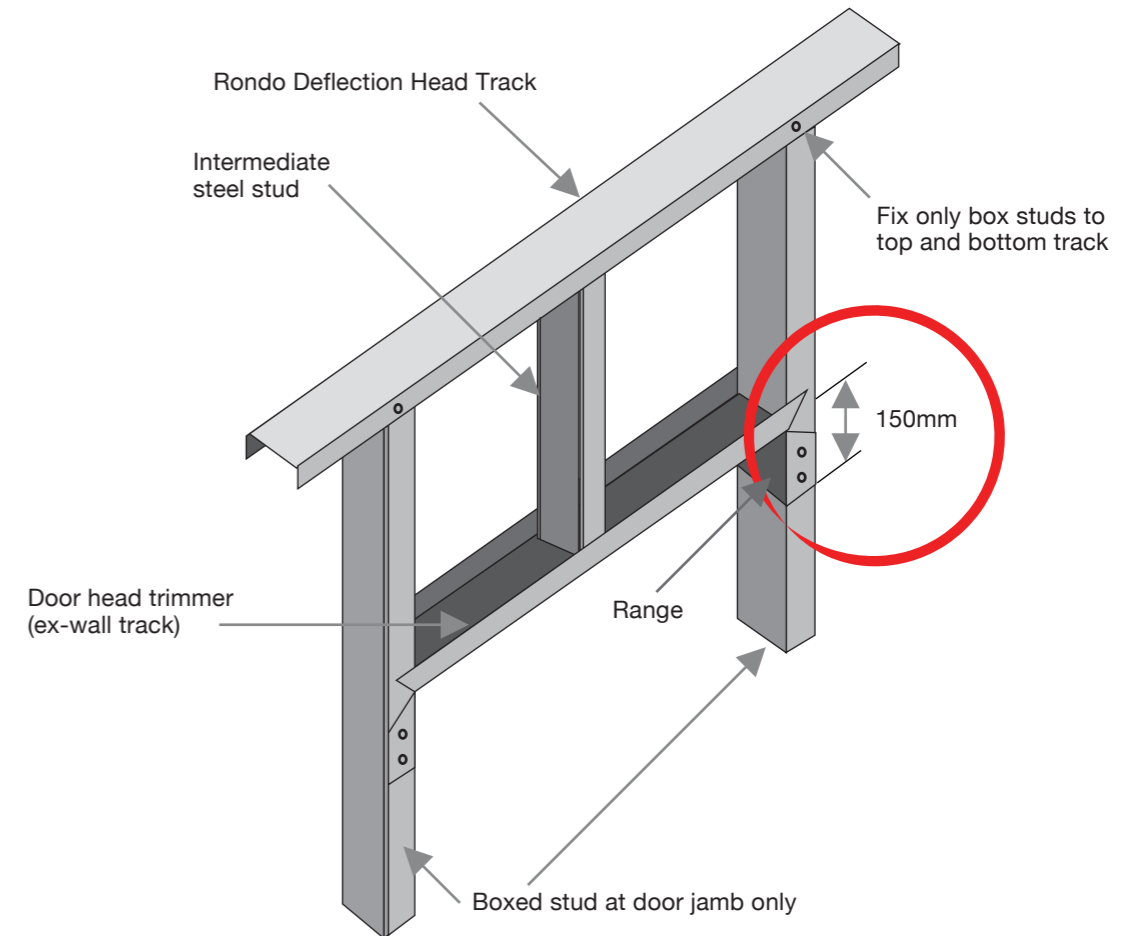


Detail C

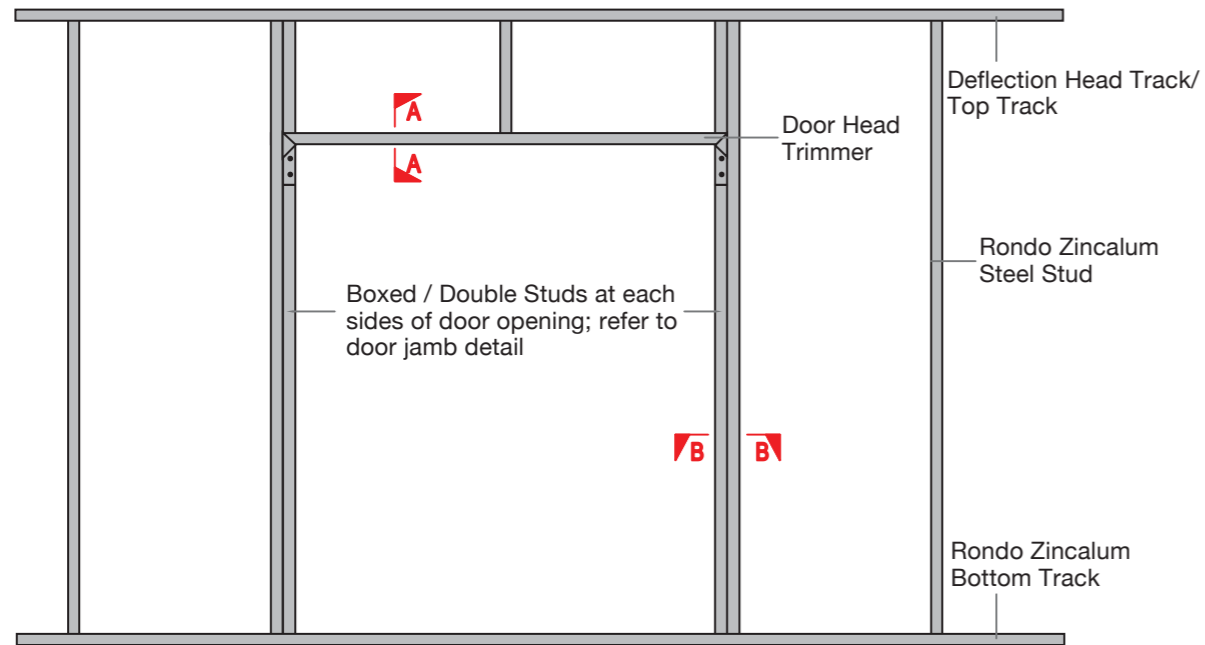


Door Head Detail

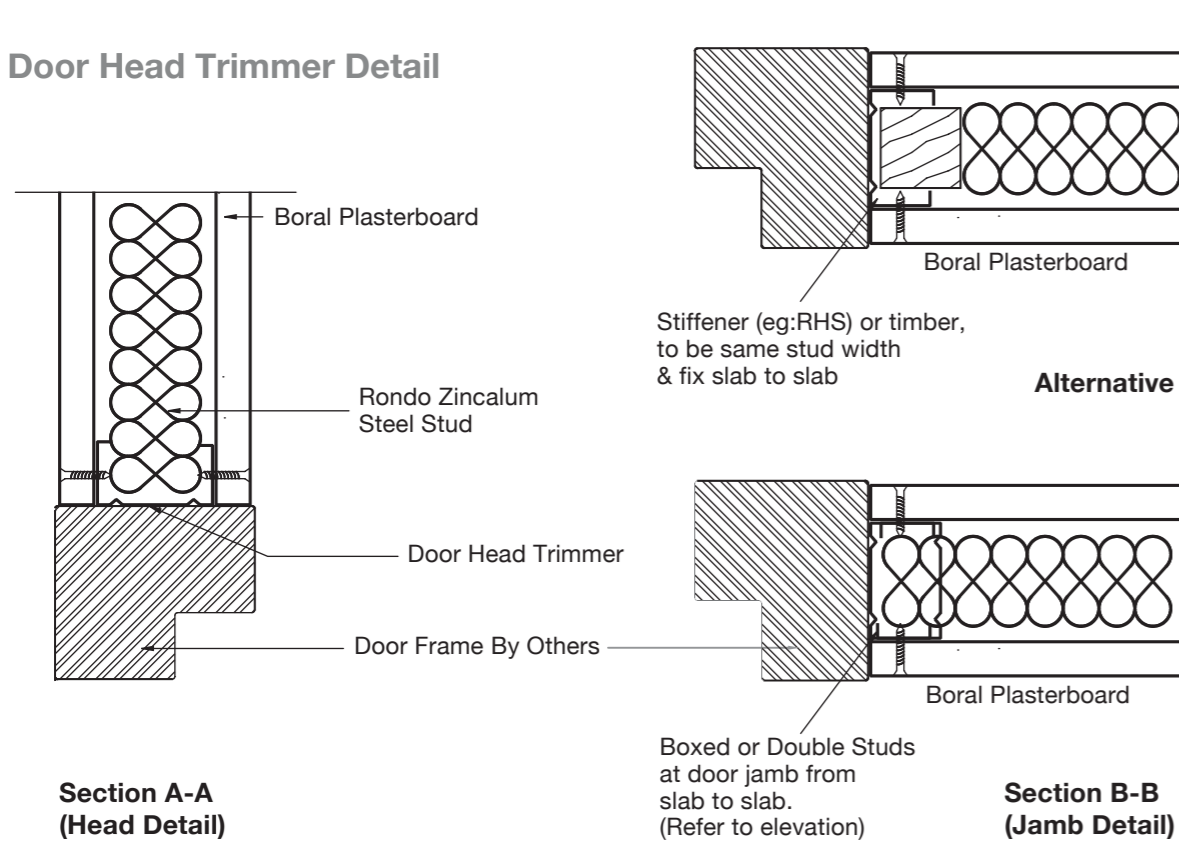
Box Stud & Door Jamb Only



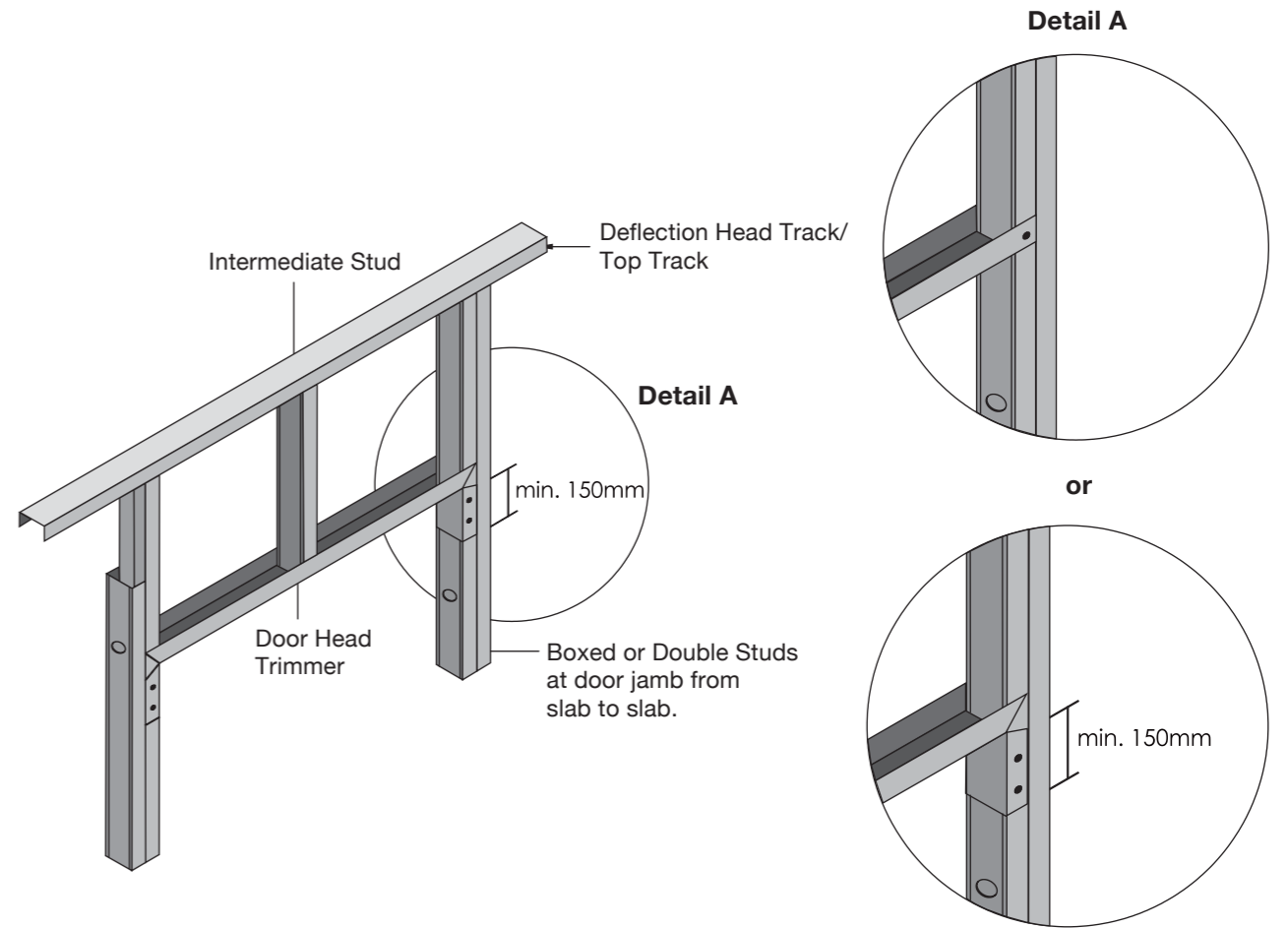
Typical Stud Arrangement at Door Opening Layout of Door Studs



Door Head Trimmer Detail



Typical Stud Arrangement at Door Opening Layout of Door Studs (Door Head Trimmer Detail)



**Product Specifications - Boral 19mm Impactstop**

Boral 19mm Impactstop “Green Label” Certified Plasterboard is the latest advancement in impact resistance plasterboard lining. When incorporated with Rondo steel stud systems, it is designed to satisfy regulatory requirements for severe duty application.

**Application**

Internal lining for residential application.

**Composition**

Boral Impactstop “Green Label” Certified Plasterboard is a **fire resistant and moisture resistant** plasterboard consists of gypsum plaster core with vermiculite, fibre glass, silicon and additives.

**Size**

Available in 19mm thickness.  
 Width 1220mm (4ft)  
 Length 2440mm (8ft, 9ft, 10ft)

**Weight**

15.0 –15.4kg/m<sup>2</sup>

**Appearance**

Boral Impactstop is recognized by its pinkish colour paper liner. It is available in tapered edge.

**Thermal Properties**

Thermal Conductivity is 0.167W/mK  
 Thermal Resistance (R) Value is 0.118m<sup>2</sup>K/W

**Authority**

Boral Impactstop “Green Label” Certified Plasterboard complies to BS 1230 : Part 1 : 1985

**Impact Performance**

Boral Impactstop has been tested to BS 5234 Part 2 : 1992 – Specification for performance requirements for strength and robustness including method of test.

**Fire Performance**

Boral Impactwall Steel Stud Partition System has a One Hour Fire Rating as tested in accordance to BS 476 Part 22 : 1987. The gypsum core is classified as non-combustible when tested in accordance to BS 476 Part 4 : 1970.

**Acoustic Performance = STC 50**

Impactwall System was tested in accordance with ASTM E90 –97 “Standard test method for laboratory measurement of airborne sound transmission loss of building partitions & elements”

**Test Reference**

**BS 1230 Part 1 : 1985 (Type 4)**

Breaking Strength	
Transverse	743 N
Longitudinal	857 N
Surface Water Resistance	100g/m <sup>2</sup>
Average Water Absorption	2.6%

**ASTM C1185**

Determination of Moisture Content	13.8%
Determination of Moisture Movement	0.03%

**BS EN 1373**

Shear Strength	0.93 N/mm <sup>2</sup>
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**ASTM C109**

Compressive Strength	18.9 N/mm <sup>2</sup>
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**On Site Pictures Reference**



Fast & easy construction reduces labour.



100% dry construction to achieve clean working environment.



Fast erection of steel framing.



Easy installation.



Neatly arranged electrical sockets.



On Site Pictures Reference



No Chasing required unlike masonry wall



Electrical conduits easily installed in a dry wall.



Clean & dry site!



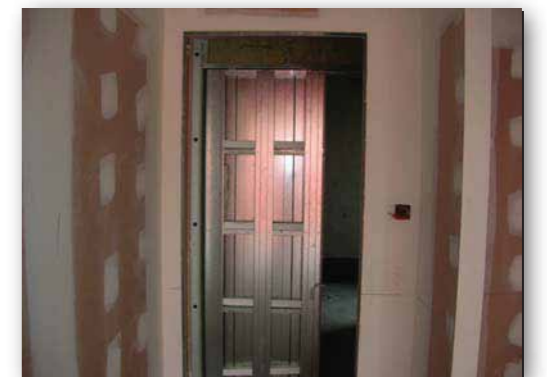
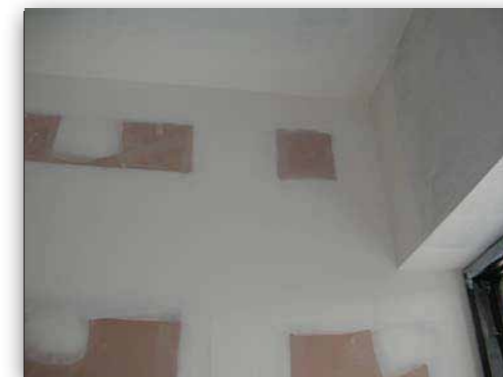
Heavy loading in drywall.



Shower area tiles/marble installed with tile adhesive.



On Site Pictures Reference



Clean & neat site, reduce house keeping cost.



Project Reference In Singapore (Completed Projects)



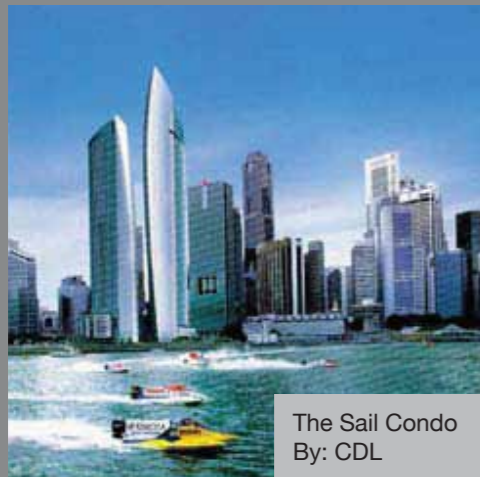
Oceanfront Condo @ Sentosa Cove  
By: CDL



Botannia Condo  
By: CDL



Butterworth33 Condo  
By: CDL



The Sail Condo  
By: CDL



Savannah Condo Park  
By: CDL



The Pier Condo  
By: CDL



Tribeca Condo  
By: CDL



ARTE Condo  
By: CDL

Project Reference In Singapore (Completed Projects)



The Solitaire  
By: CDL



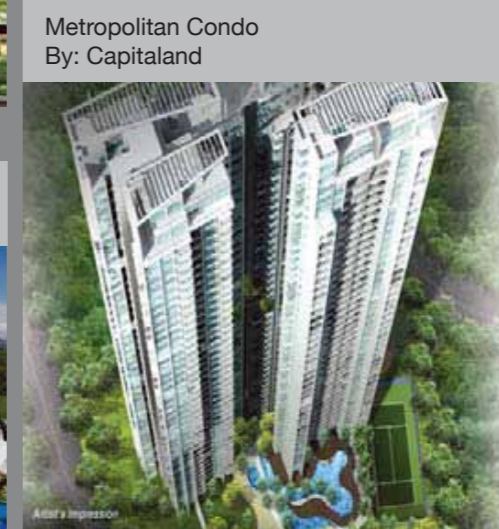
Shelford Residences  
By: CDL



St Thomas Suite Condo  
By: Fraser Centrepoint



CityLight Condo  
By: Capitaland



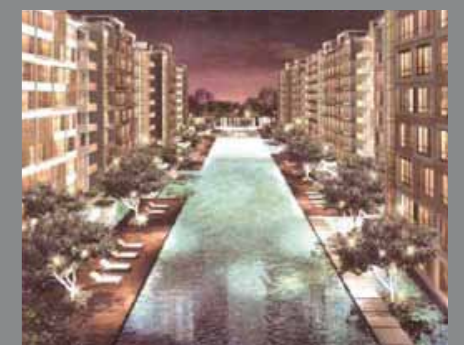
Metropolitan Condo  
By: Capitaland



HDB Flats @ Boon Lay  
By: HDB



SeaFront Condo @ Meyer  
By: Capitaland



Ferrara Park Condo  
By: Hong Leong



Project Reference In Malaysia



D'Heron @ Putra Jaya Precint 16  
Developer: Putra Perdana Development  
Architects: NR Architect



Bukit Utama Condominium @ Bandar Utama  
Developer: First Nationwide Development  
Architects: CT Ooi Architect



# Certification & Warranty

Boral Full 10 Years Residential Warranty



PSB Class 1A COC 4-Hour Fire Rated System – BS 476 Part 22 : 1987

PSB Class 1A COC 1-Hour Fire Rated System – BS 476 Part 22 : 1987

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証證書 ◆ CERTIFICADO ◆ CERTIFICAT



PSB Singapore

## CERTIFICATE OF CONFORMITY

**Product Listing Scheme\* : Class 1A**

This Certificate is issued to

**Boral Plasterboard (M) Sdn Bhd**  
86 Tuas Ave 11  
Singapore 639099

**FOR**

Product: Fire Rated Partition System  
 Brand: Boral  
 Model: -  
 Country of Origin: NA

Product Details: Integrity: 240 mins; Insulation: 240 mins  
 Boral Firestop Plasterboard, 16mm, 855kg/m<sup>3</sup>  
 Boral Impactstop Plasterboard, 19mm, 880kg/m<sup>3</sup>

which has complied with the requirements of the scheme and based on the following:

<b>Standard(s)</b>	<b>Test Report(s)</b>
British Standard 476 Part 22 : 1987	TUV SUD PSB no. S08MEC05632/KKC



Vice-President (Certification Department)  
TUV SUD PSB

Certificate No:	Date of Original Issue:	Date of Last Revision:	Date of Expiry:
012020	22/12/2008	-	31/12/2011



\* All products listed under Class 1A/1B must have this mark affixed / printed on them. Failure to comply with this requirement may result in revocation of this certificate.



This Certificate is part of a full report and should be read in conjunction with it. This Certificate remains the property of TUV SUD PSB Pte Ltd and shall be returned upon request. The use of this Certificate is subjected to the terms and conditions of the Product Listing Scheme. The manufacturer is solely responsible for compliance of any product that has the same designation as the product type-tested. Persons relying on this Certificate should verify its validity by checking TUV SUD PSB's website at [www.tuv-sud-psb.com](http://www.tuv-sud-psb.com).

TUV SUD PSB Pte Ltd • 1 Science Park Drive • Singapore 118221

TUV

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証證書 ◆ CERTIFICADO ◆ CERTIFICAT



PSB Singapore

## CERTIFICATE OF CONFORMITY

**Product Listing Scheme\* : Class 1A**

This Certificate is issued to

**Boral Plasterboard (M) Sdn Bhd**  
8 Boon Lay Way  
#08-14 TradeHub 21  
Singapore 609964

**FOR**

Product: Fire Rated Partition System  
 Brand: BORAL  
 Model: IP1  
 Country of Origin: NA

Product Details: Integrity: 60mins; Insulation: 60mins  
 Boral Impact Panel, 19mm, 880kg/m<sup>3</sup> (1 layer each side)

which has complied with the requirements of the scheme and based on the following:

<b>Standard(s)</b>	<b>Test Report(s)</b>
BS 476-22:1987	PSB Test No. 25S0010529/LGJ



Vice-President (Certification Department)  
TUV SUD PSB

Certificate No:	Date of Original Issue:	Date of Last Revision:	Date of Expiry:
010452	03/05/2001	26/03/2012	02/05/2015



\* All products listed under Class 1A/1B must have this mark affixed / printed on them. Failure to comply with this requirement may result in revocation of this certificate.



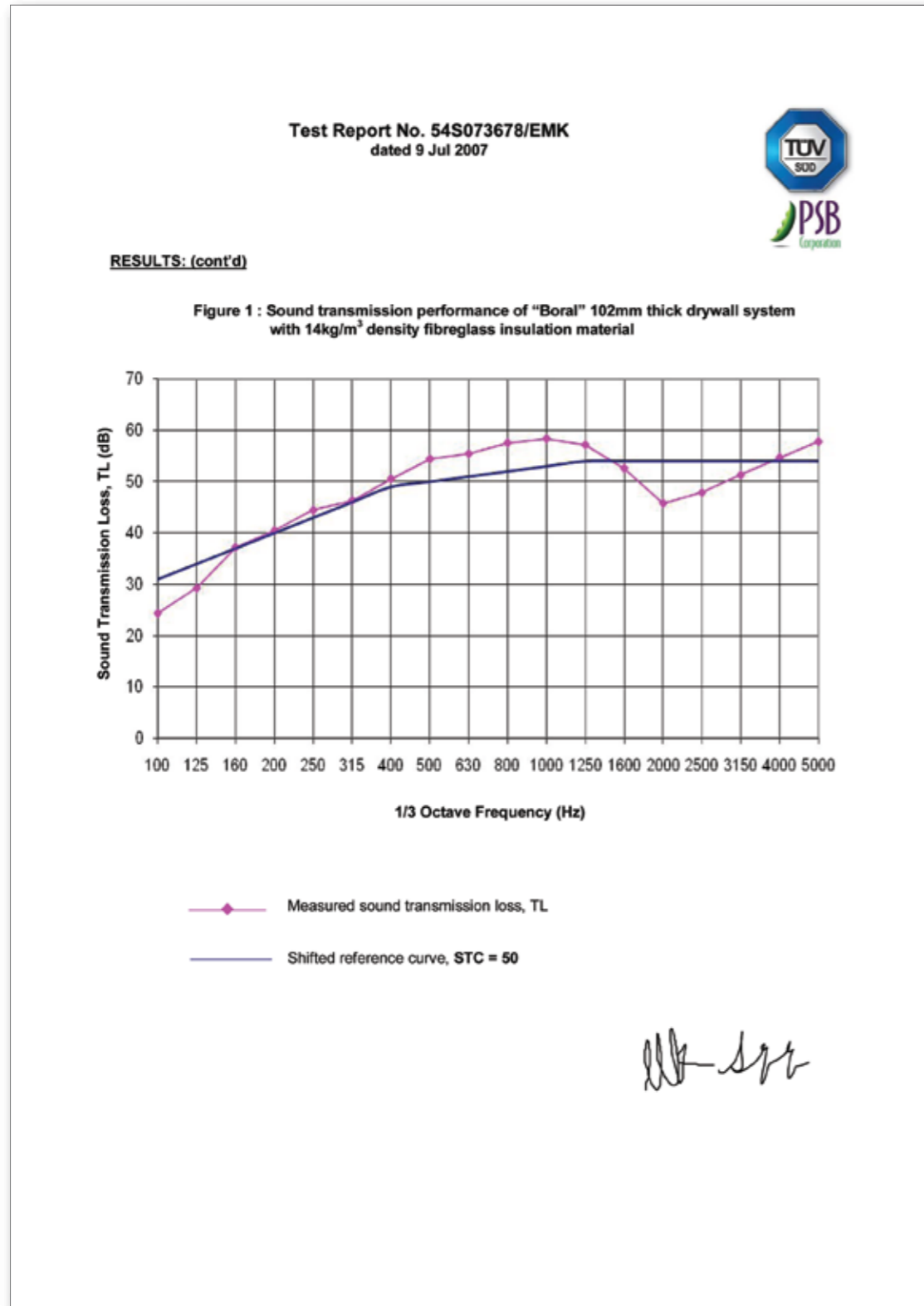
This Certificate is part of a full report and should be read in conjunction with it. This Certificate remains the property of TUV SUD PSB Pte Ltd and shall be returned upon request. The use of this Certificate is subjected to the terms and conditions of the Product Listing Scheme. The manufacturer is solely responsible for compliance of any product that has the same designation as the product type-tested. Persons relying on this Certificate should verify its validity by checking TUV SUD PSB's website at [www.tuv-sud-psb.com](http://www.tuv-sud-psb.com).

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TUV



Sound Transmission Performance Test Report No. 54S073678/EMK



IBS Status Company Verification – Innovative Drywall System

No. Siri:  
Serial No. : **0153**

### PENGESAHAN SYARIKAT STATUS IBS IBS Status Company Verification

Adalah dengan ini disahkan bahawa:  
*It is hereby verified that:*

**BORAL PLASTERBOARD (MALAYSIA) SDN BHD**  
 LOT 606  
 OFF JALAN SS13/1K  
 47500 SUBANG JAYA, SELANGOR.

Lokasi Kilang:  
Factory Location:

**PLOT 28 – 33**  
**JALAN PERUSAHAAN SATU**  
**PARIT BUNTAR INDUSTRIAL ESTATE**  
**34200 PARIT BUNTAR, PERAK.**

Sebagai syarikat Status IBS yang mengeluarkan IBS berikut:  
*As an IBS status company that manufactures the following IBS components:*

**INNOVATIVE SYSTEM:**  
 - PANEL GYPSUM (DRY-WALL)  
 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Nota : Pengesahan Syarikat Status IBS ini adalah berdasarkan Laporan Penilaian:  
*Note : This IBS Status Company Verification is based on Assessment Report No:*

**FSL220910IBSC0167**

Pendaftaran ini hendaklah diperbaharui selewat-lewatnya 30 hari sebelum tarikh tamat tempoh.

**Puanat IBS, CIDB Malaysia**  
 Tingkat 1, Block E  
 Jalan Chan Sow Lin  
 55200 Kuala Lumpur  
 Malaysia  
 Tel : 603-9281 6009  
 Fax: 603-9281 5870

**Ir. Elias Ismail**  
 Senior General Manager  
 CIDB Malaysia

**Dafuk Ir. Hamzah Hasan**  
 Chief Executive  
 CIDB Malaysia

Tarikh Dikeluarkan:  
*Issue Date:* **01 NOVEMBER 2010**

Sah Sehingga:  
*Valid Until:* **31 OKTOBER 2012**





# WARRANTY

## USG Boral Commercial Warranty

# WARRANTY

## USG Boral 10-Year Residential Warranty

USG Boral warrants goods manufactured and supplied by it to be of consistent quality and free from any defects. Any goods found to be defective will be replaced without charge.

This warranty shall only apply to goods installed with the components and accessories as specified and in accordance with the detailed instructions set out in USG Boral's technical literature.

USG Boral products are manufactured to suit the requirements of the building industry and local conditions.

The liability of USG Boral under this warranty is limited to (at the sole discretion of USG Boral) the replacement of goods or the supply of equivalent goods.

*For further enquiries, please contact our sales team:*

### USG Boral Singapore

8 Boon Lay Way #02-06 TradeHub 21  
Singapore 609964  
Tel: (65) 6272 9272 Fax: (65) 6278 5310  
www.usgboral.com

USG Boral offers homeowners a full 10-Year warranty on all of our residential systems which are installed correctly, and by our recommendations.

We warrant goods that have been manufactured and supplied by USG Boral to be of consistent quality and free of defects. Any goods found to be defective will be replaced without charge.

USG Boral residential warranty shall only apply to goods installed with the components and accessories as specified and in accordance with the detailed instructions set out in USG Boral's technical literature. External factors that negatively impact our systems are not covered.

The liability of USG Boral under this warranty is limited to (at the sole discretion of USG Boral) the replacement of goods or the supply of equivalent goods.

*For further enquiries, please contact our sales team:*

### USG Boral Singapore

8 Boon Lay Way #02-06 TradeHub 21  
Singapore 609964  
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