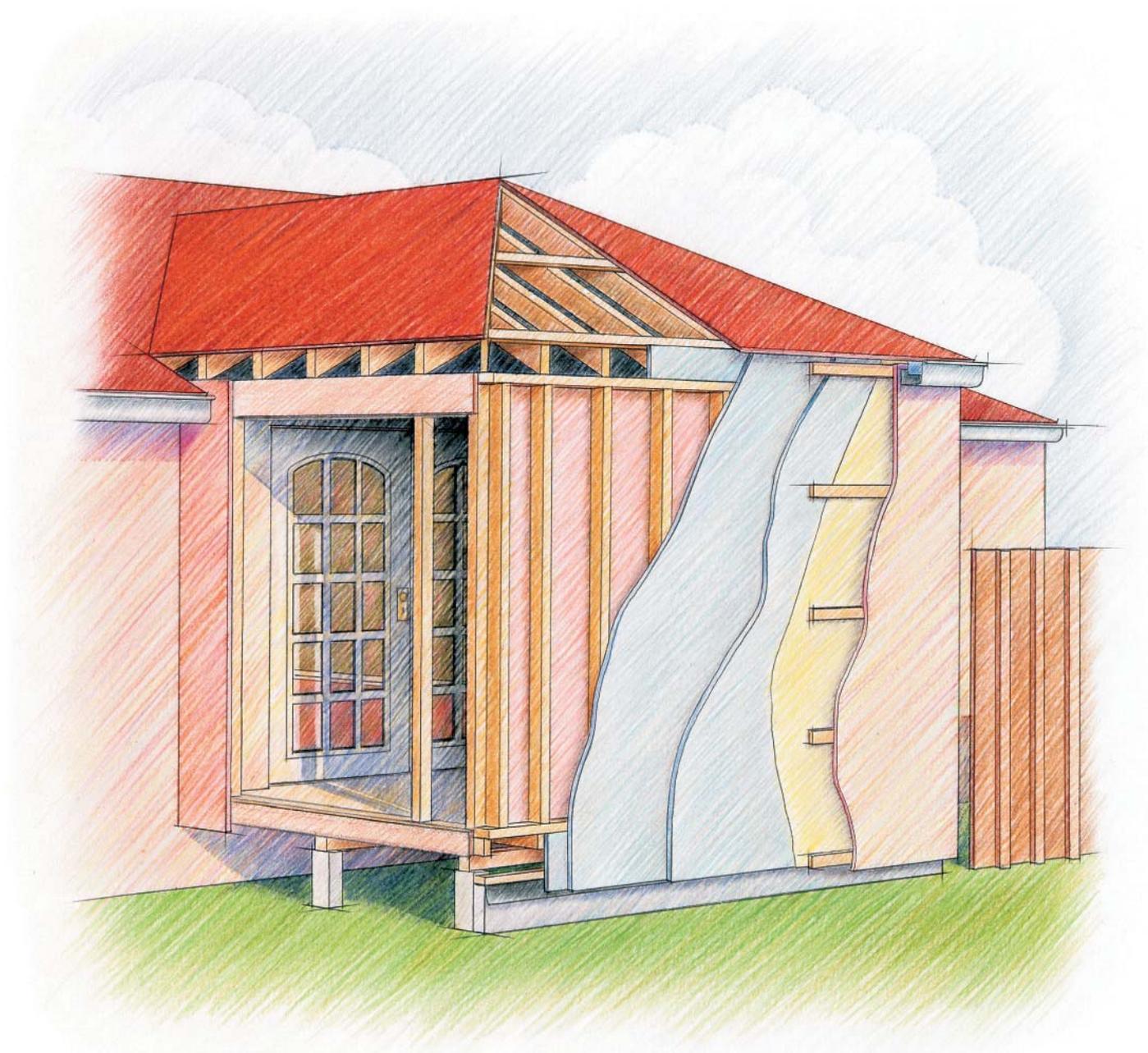




# OutRWALL™

Exterior Wall Systems for Residential Construction



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### Introduction

Developers are constantly looking for timber framed systems which will satisfy BCA requirements for external wall fire ratings and provide low-cost fast track construction on site. Boral Plasterboard recognise this requirement and has developed the OutRWALL™ exterior wall system to meet this need.

This manual discusses and illustrates this purpose designed system. Boral Plasterboard's OutRWALL™ exterior wall system is easy to build, using conventional materials, methods and equipment.

With the Boral Plasterboard OutRWALL™ exterior wall system, new buildings can be constructed on or near the boundary and still satisfy the fire resistance requirements of the BCA.

Providing fire ratings of 1 or 1.5 hours, Boral Plasterboard OutRWALL™ exterior wall system provides effective resistance to the spread of fire from neighbouring buildings.

Perfect for extensions to existing buildings, OutRWALL™ exterior wall system is a cost-effective, labour-saving way to upgrade the fire resistance rating of a boundary wall to comply with the Building Code.

### Benefits

- Lightweight Construction;
- Low-cost alternative to brick wall construction;
- Standard load bearing timber stud wall construction;
- Fire ratings of 1 or 1.5 hours to external load bearing timber framed walls; and
- Can extend existing buildings to boundary and meet BCA required fire resistance rating.

### Description

This manual describes the Boral Plasterboard OutRWALL™ exterior wall system for use as fire rated exterior walls in residential buildings using timber framing.

All details and information contained in this publication are intended as a general guide for use in exterior wall construction. Refer to the graphics on following pages for construction details.

### OutRWALL™ Applications

The following summary is intended as a guide only. Readers should satisfy themselves as to the requirements of the BCA by direct reference and/or through an appropriately qualified person.

Building Classification and Type	Relevant OutRWALL™ System
Class 1	OutRWALL 60
Class 2, Type A or Type B	OutRWALL 90C or OutRWALL 90F
Class 2, Type A or Type B, Sprinklers	OutRWALL 90A or OutRWALL 90D
Class 2, Type C	OutRWALL 90, OutRWALL 90B or OutRWALL 90E
Class 3, Type A or Type B	OutRWALL 90C or OutRWALL 90F
Class 3, Type C	OutRWALL 90, OutRWALL 90B or OutRWALL 90E
Class 10	OutRWALL 60

## Design Notes

- Frames, stumps and footings are to be designed and installed in accordance with the requirements of AS 1684 - 1999 "Residential Timber Framed Construction" and AS 2870 - 1996 "Residential Slabs and Footings - Construction".
- Exterior cladding must be properly weather sealed for the life of the structure, particularly at ends, edges & joints. Adequate drainage should be provided for any moisture which may develop inside the cladding due to condensation or leakage.
- Boral Plasterboard drywall materials and accessories must be installed in accordance with the detailed specifications supplied in Boral Plasterboard Technical Literature.
- Limiting heights will be determined by various design criteria including wind loads, deflection limits, stud size, stud spacing and charfactor number where applicable.
- With the introduction of "Charfactor numbers" assigned to each system, the designer/builder has greater choice available for selection of framing to meet the requirements of height, axial load and fire ratings. For detailed information on how to use "Charfactor Numbers" for framing selection, refer to Boral Plasterboard "Construction Selector" - Technical Manual 100C.
- Movement or control joints should be installed: (a) where the plasterboard abuts dissimilar materials, and/or where the construction changes within the plane of the wall; (b) in long unbroken partition or wall runs at not more than 12 metre centres; and (c) as required to accommodate shrinkage of timber.

## Fire Performance

The OutRWALL™ system has been assessed by Warrington Fire Research in their assessment Nos. WFRA C91580 and WFRA C91585 for fire-ratings of 1 hour and 1.5 hours. The system must be assembled in accordance with the relevant assessment.

## Acoustic Performance

Acoustic performance may be improved with variations in plasterboard, stud and/or partition width and choice of insulation. These variations offer a wide choice of attainable  $R_w$  values. For details, contact Boral Plasterboard.

## Cladding

"Lightweight Cladding" includes, but is not limited to:

- Fibre cement sheets, profiles and weatherboard;
- Timber or hardboard weatherboards;
- Steel or aluminium profiles; and
- Plywood.

**Note:** Cladding does not include materials with a self ignition temperature of less than 200°C except where the fire rating is from the outside only.

## Prefabricated Walls

Where conventional construction can not be used due to difficult access, the Boral OutRWALL™ exterior wall system may be prefabricated prior to erection.

## Plasterboard Standard

Boral Plasterboard is manufactured in accordance with Australian Standard A.S. 2588 - 1983 "Gypsum Plasterboard" and is to be installed generally in accordance with the requirements of Australian/ New Zealand Standard A.S/NZS 2589.1:1997 Part 1 "Gypsum Plasterboard".

## Architectural Specification

### Scope

Specify to meet project requirements.

### Qualifications

All materials, unless otherwise indicated, shall be manufactured by Boral Plasterboard, and shall be installed in accordance with its current printed instructions.

### Delivery and Storage of Materials

All materials shall be delivered in their original unopened packages and stored in an enclosed shelter providing protection from damage and exposure to the elements. Damaged or deteriorated materials shall be removed from the site.

### Framing

Timber framing to receive plasterboard lining shall be structurally sound, free from bow, and in general compliance with Building Code requirements. Damaged and excessively bowed studs shall be replaced before installation of plasterboard lining. Timber framing shall approximate the moisture content it will reach in service by allowing the enclosed building to stand as long as possible prior to the application of plasterboard. Do not install plasterboard over wet framing.

# 4

# Construction Details

## OutRWALL™ 60, 90 and 90A

Compressed rockwool insulation - may be encapsulated

Boral plasterboard as required (refer to table on page 5)

Boral Wet Area Firestop plasterboard as required (refer to table on page 5)

Additional layer of 16mm Boral Wet Area Firestop butted to top plate and fixed to roof framing

Roof sarking terminates in gutter

Gutter by others

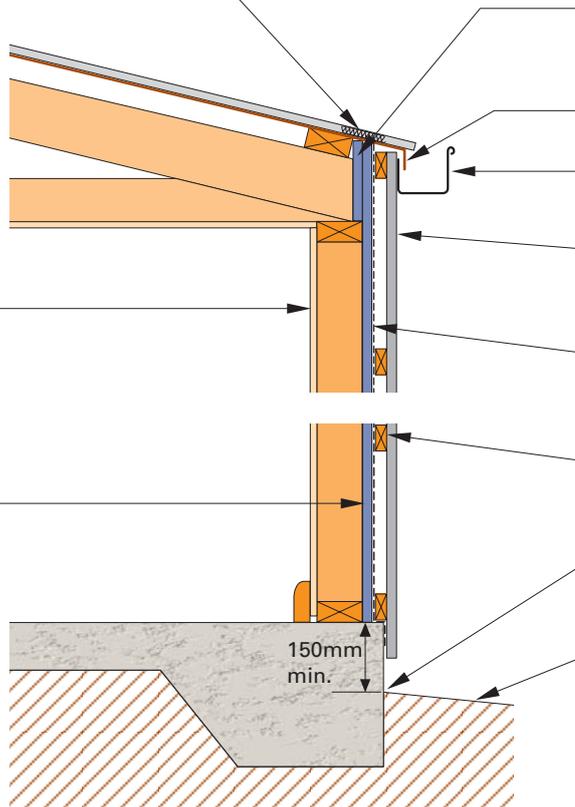
Lightweight external cladding fixed to timber battens to manufacturer's specifications

Tyvek Homewrap stapled to plasterboard as per manufacturer's specifications.

Vertical or horizontal battens fixed to studs at 600mm maximum centres

Provide appropriate vermin and termite protection at ground level

Ground level to be suitably graded to prevent pooling adjacent to external wall



**Typical System on Slab**

Box gutter design by others

Roof sarking terminates in gutter

Insulation as required

Gutter support ex batten attached to truss top chord

Boral plasterboard as required (refer to table on page 5)

Load bearing timber frame max. 600mm stud centre

Boral Wet Area Firestop plasterboard as required (refer to table on page 5)

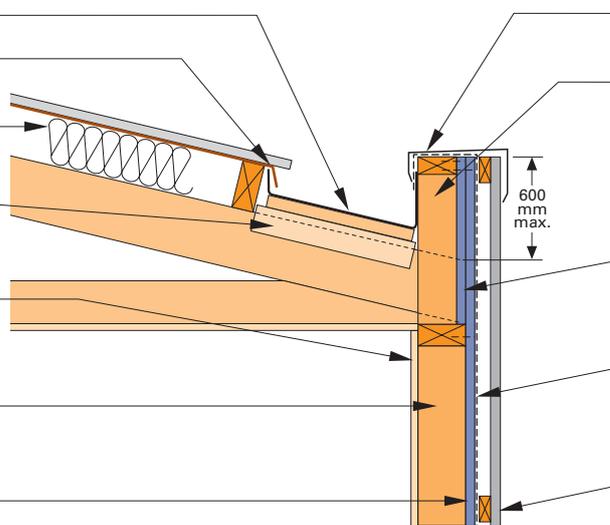
Capping as required

70 x 35 timber stud uprights fixed to truss top chord. Provide 70 x 45 top plate.

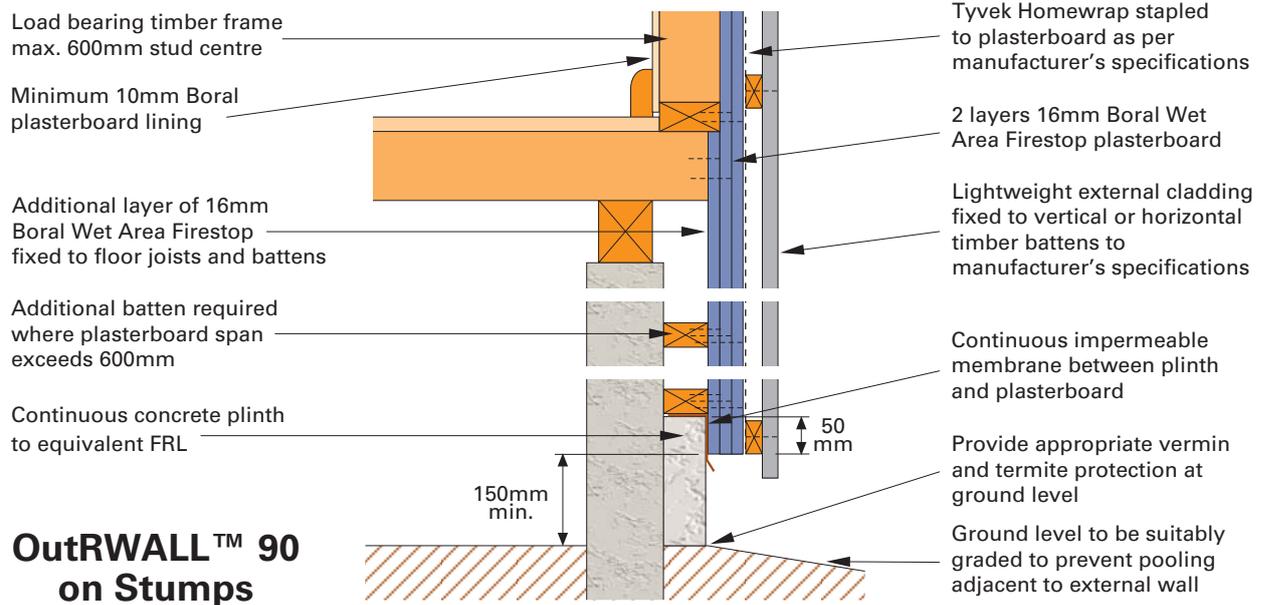
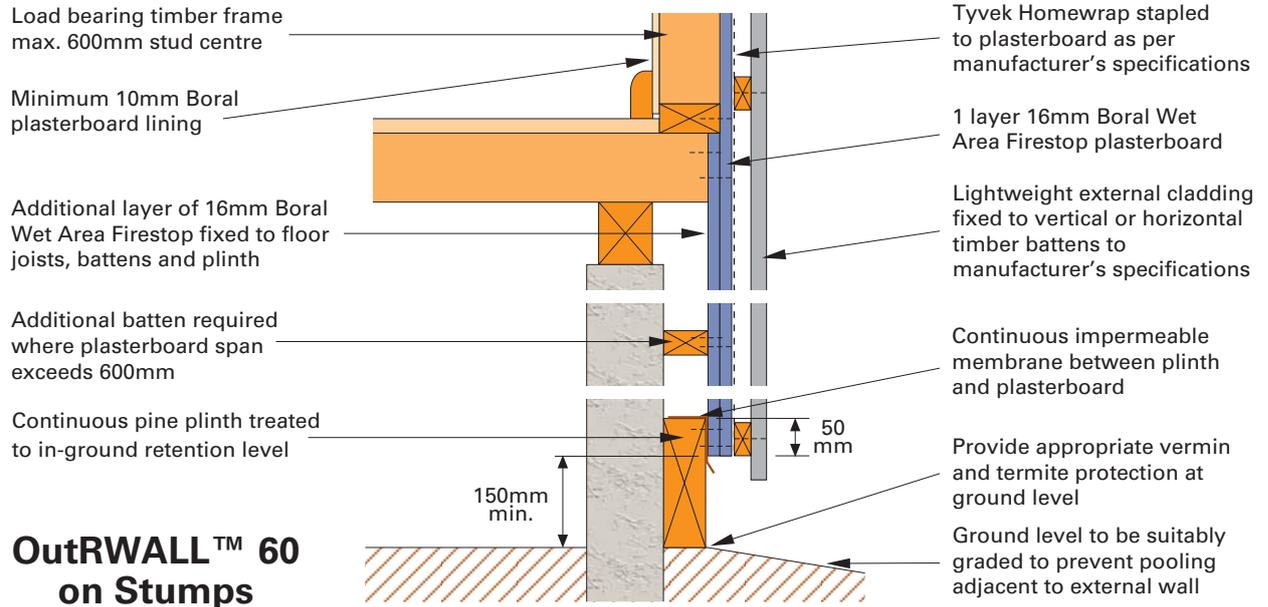
Additional layer of 16mm Boral Wet Area Firestop fixed to roof framing

Tyvek Homewrap stapled to plasterboard and carried over parapet into gutter as per manufacturer's specifications

Lightweight external cladding fixed to vertical or horizontal timber battens to manufacturer's specifications



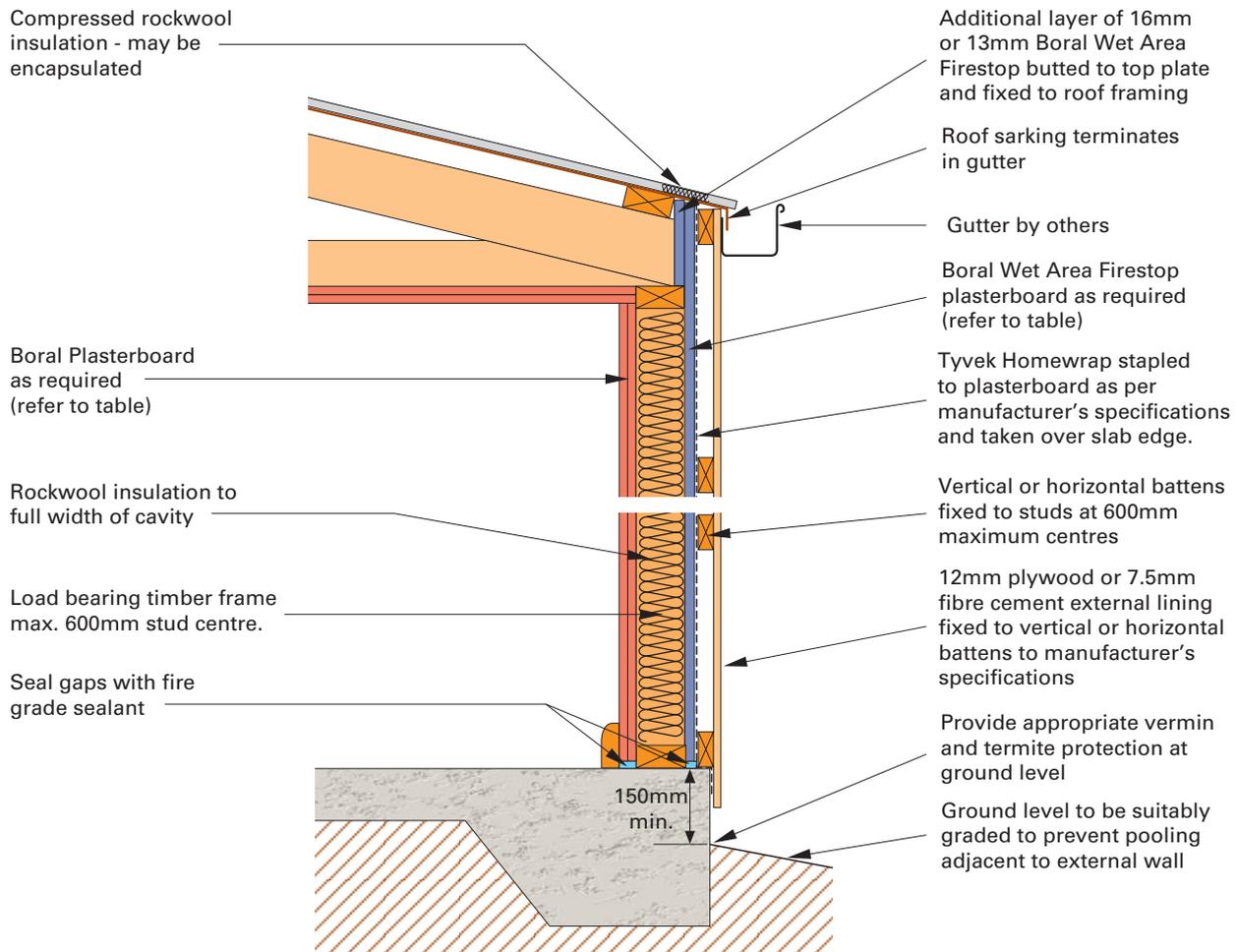
**Box Gutter Option**



System	Internal Plasterboard	External Plasterboard	Charfactor	FRL*
OutRWALL™ 60	1 x 10mm Standard Core	1 x 16mm Wet Area Firestop as per system TS3	11	60/60/60 from outside only
OutRWALL™ 90	1 x 10mm Standard Core	2 x 16mm Wet Area Firestop as per system TS14	N/A	90/90/90 from outside only
OutRWALL™ 90A	1 x 16mm Wet Area Firestop	2 x 16mm Wet Area Firestop as per system TS14	11	90/90/90 from outside 60/60/60 from inside

- Frame and footings to be in accordance with AS 1684 - 1999 "Residential Timber Framed Construction" and AS 2870 - 1996 "Residential Slabs and Footings - Construction".
- Provide movement joint where timber shrinkage is expected.
- Brick footing options are also available. Contact Boral Plasterboard for details (see back page).
- Ensure that lateral support to top of wall is maintained during a fire event.
- \* Warrington Fire Research Assessment No. WFRA C91580

## OutRWALL™ 90B, 90C and 90D (with Rockwool insulation)

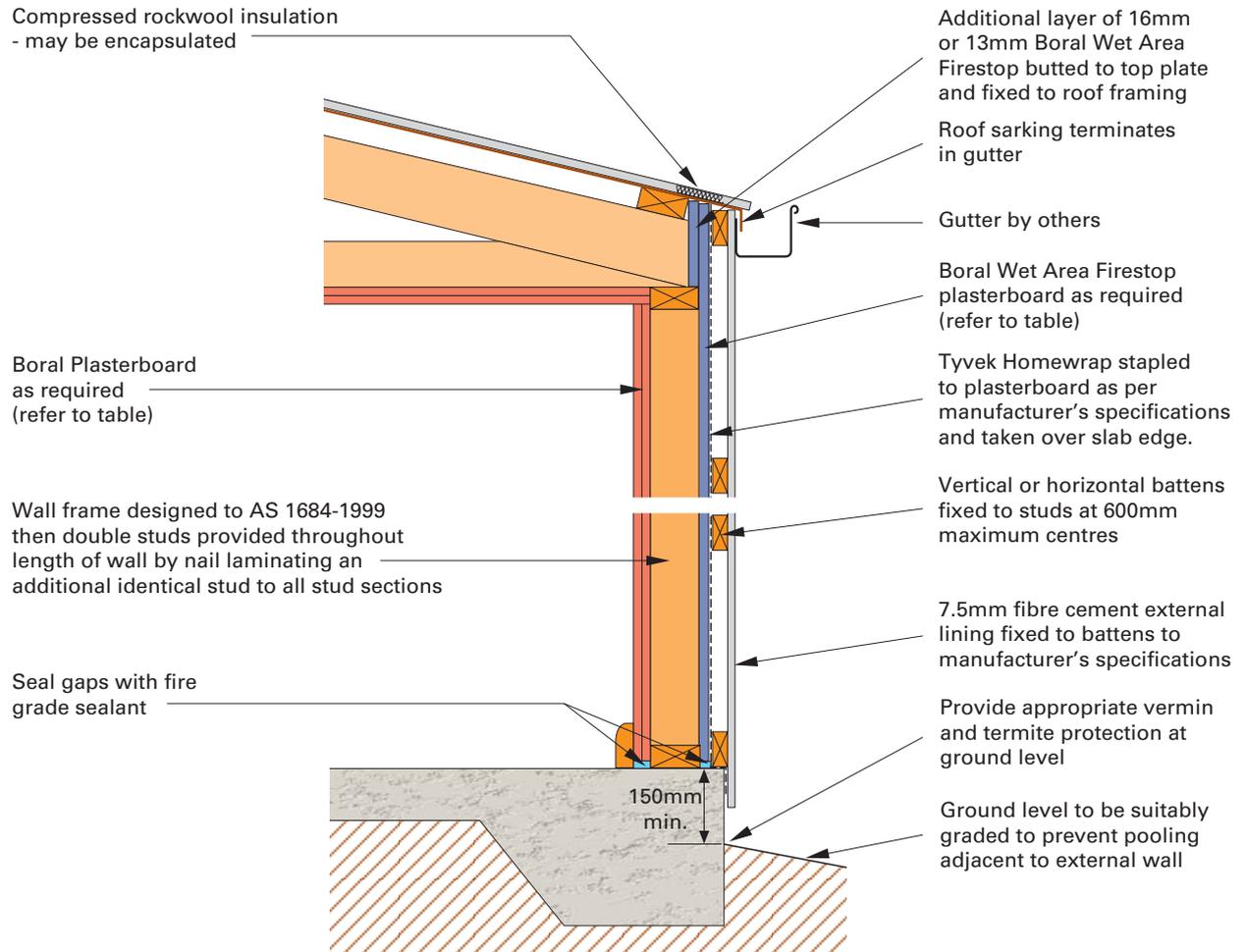


Typical System on Slab

System	Internal Plasterboard	External Plasterboard	Charfactor	FRL*
OutRWALL™ 90B	1 x 10mm Standard Core	2 x 13mm Wet Area Firestop as per system TS15	N/A	90/90/90 from outside only
OutRWALL™ 90C	2 x 13mm Firestop	1 x 16mm Wet Area Firestop as per system TS3	N/A	90/90/90 from both sides
OutRWALL™ 90D	1 x 16mm Firestop	1 x 16mm Wet Area Firestop as per system TS3	11	90/90/90 from outside 60/60/60 from inside

- Frame and footings to be in accordance with AS 1684 - 1999 "Residential Timber Framed Construction" and AS 2870 - 1996 "Residential Slabs and Footings - Construction".
- Provide movement joint where timber shrinkage is expected.
- Brick and stump footing options are also available. Contact Boral Plasterboard for details (see back page).
- Ensure that lateral support to top of wall is maintained during a fire event.
- \* Warrington Fire Research Assessment Nos. WFRA C91580 and WFRA C91585.

## OutRWALL™ 90E and 90F (with double studs)

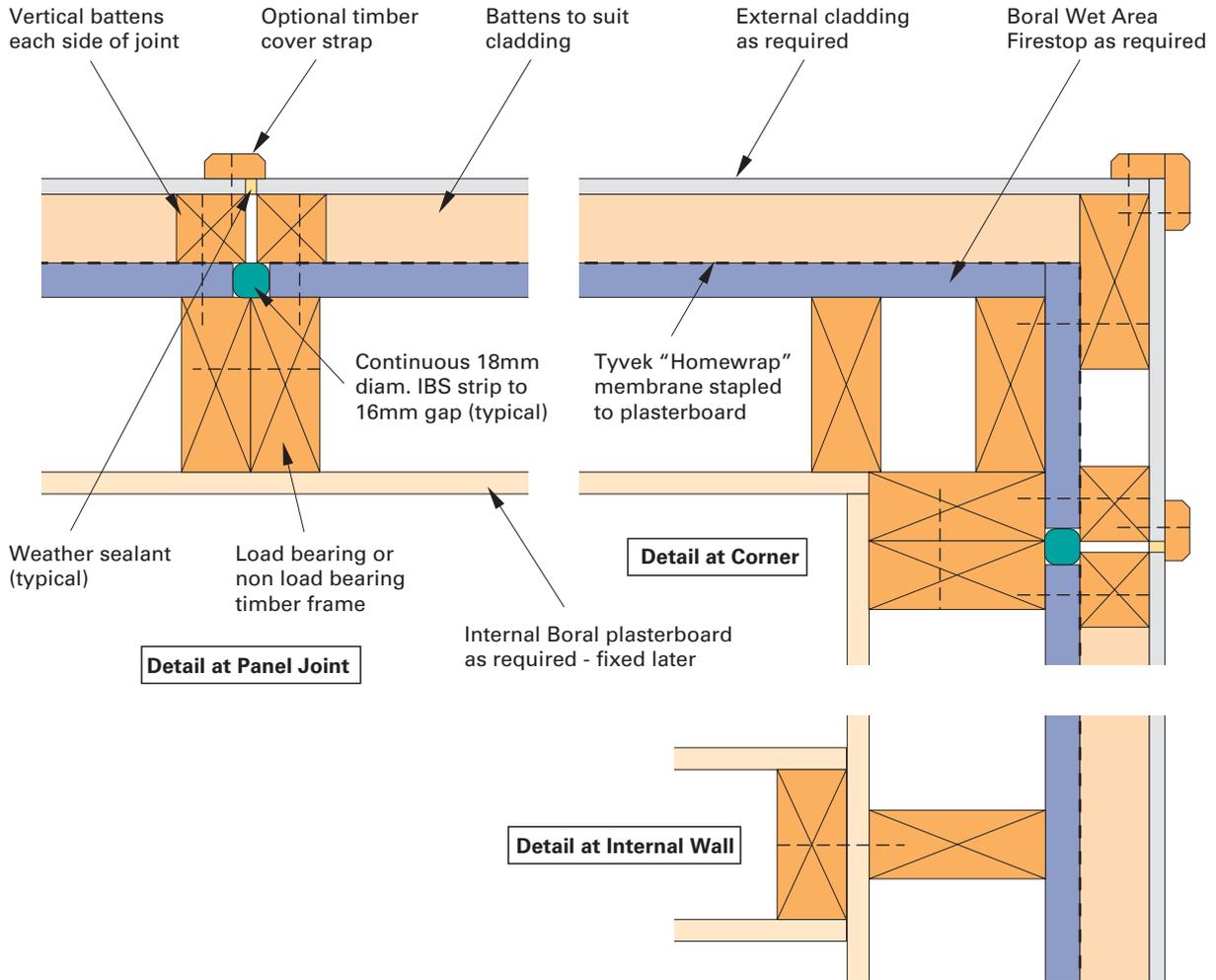


**Typical System on Slab**

System	Internal Plasterboard	External Plasterboard	Charfactor	FRL*
OutRWALL™ 90E	1 x 10mm Standard Core	2 x 13mm Wet Area Firestop as per system TS15	N/A	90/90/90 from outside only
OutRWALL™ 90F	2 x 13mm Firestop	1 x 16mm Wet Area Firestop as per system TS3	N/A	90/90/90 from both sides

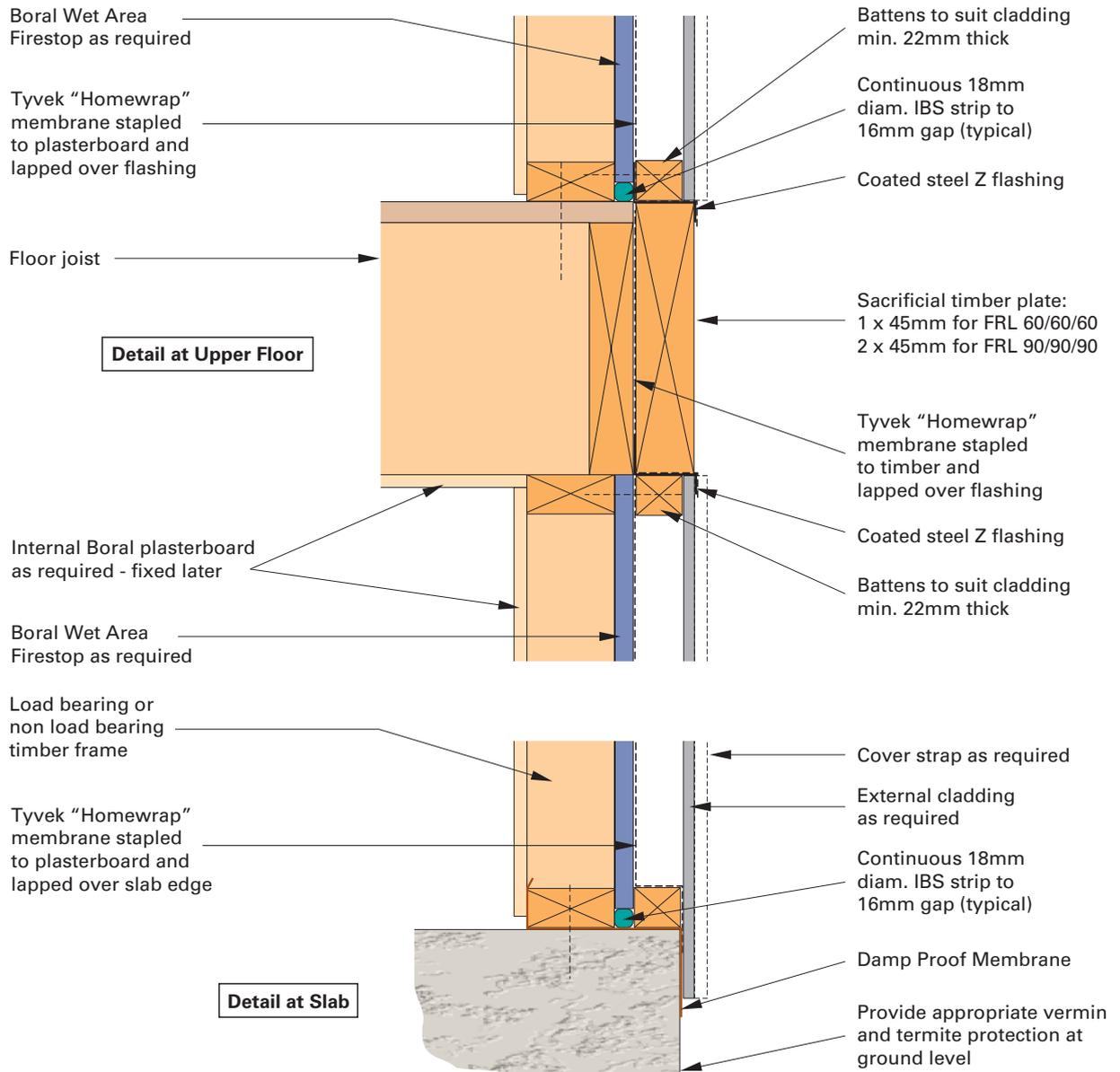
- Frame and footings to be in accordance with AS 1684 - 1999 "Residential Timber Framed Construction" and AS 2870 - 1996 "Residential Slabs and Footings - Construction".
- Provide movement joint where timber shrinkage is expected.
- Brick and stump footing options are also available. Contact Boral Plasterboard for details (see back page).
- Ensure that lateral support to top of wall is maintained during a fire event.
- \* Warrington Fire Research Assessment No. WFRA C91580

Prefabricated OutRWALL™ Details



Horizontal Section Detail

## Prefabricated OutRWALL™ Details



**Vertical Section Detail for Multi-storey Construction**

**Plasterboard**

**Standard Core**

10mm thick, 1200mm and 1350mm wide plasterboard, length as required.

**Wet Area Firestop**

13mm and 16mm thick, 1200mm wide plasterboard, lengths as required.

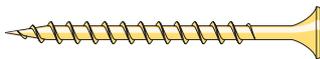
**Fasteners**

Number of Layers of Plasterboard x Thickness	Nails			Screws
	Smooth Shank	Annular Ring Shank	Uninail	Type W
1 x 10mm	40mm <sup>1</sup> 30mm <sup>2</sup>	30mm <sup>1</sup> 30mm <sup>2</sup>	30mm <sup>1</sup> 30mm <sup>2</sup>	25mm
1 x 16mm	50mm <sup>1</sup> 50mm <sup>2</sup>	-	-	32mm
2 x 16mm	65mm <sup>1</sup> 65mm <sup>2</sup>	-	-	45mm
2 x 13mm	65mm <sup>1</sup> 65mm <sup>2</sup>	-	-	45mm

1 = Softwood 2 = Hardwood

**Screws**

**Wood/Timber screws Type W** - for fastening plasterboard to timber framing.



**Nails**



**Smooth Shank**



**Annular Ring**

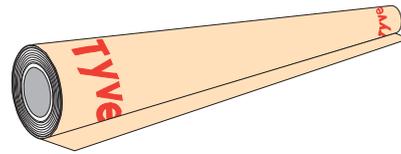


**Uninail**

**Water Proofing Membrane**

**Tyvek® Homewrap™**

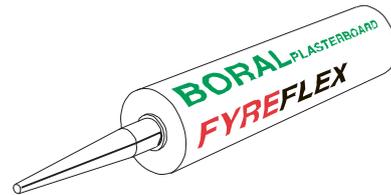
Used to line the outer face of plasterboard sheeting behind exterior cladding. **Tyvek®** is a registered trademark of DuPont™.



**Caulking and Sealants**

**Boral FyreFlex or other approved fire rated sealant**

Fire resistant sealant used as a flexible sealant at movement joints and wall/floor bases.



**Fyre Seal IBS (or equivalent)**

A Promat Fyreguard Pty. Ltd. product used as a flexible and expandable fire sealant in lieu of, or in conjunction with, Boral Plasterboard Fyreflex Sealant. For use in construction joints and floor/wall bases.



**Boral Cornice Adhesive**

Used in fire rated systems to caulk gaps between plasterboard wall and structure (eg. floor/wall base).

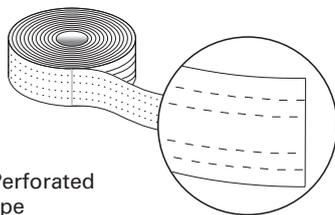


## Joint Treatment

Any of the range of Boral Plasterboard Jointing Systems, reinforced with slotted perforated paper tape, may be used for jointing over internal Standard Core, Firestop & Wet Area Firestop plasterboard.

**Note:** Taping and setting is not required on external plasterboard.

### Paper Tape



Slotted Perforated Paper Tape

### Taping and Basecoating Compounds



### All Purpose Jointing Compounds

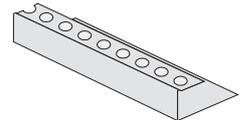


### Finishing Compounds

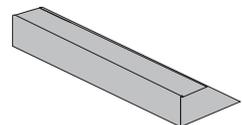


### Metal Trims & Accessories

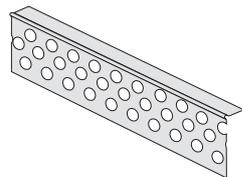
Rondo Plaster Stopping Bead P13



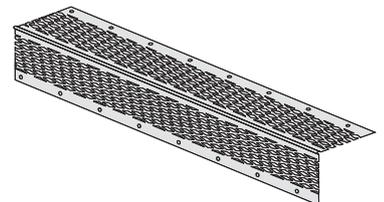
Rondo Plaster Casing Bead P07, P08



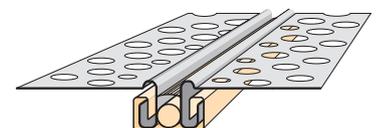
Rondo Plaster Long Leg Stopping Angle P26, P27



Rondo Plaster Corner Bead P01, P32 and P55



Control Joint Component Part No. P35



## Guarantee

Products manufactured and supplied by Boral Australian Gypsum Limited (BAGL) A.C.N. 004 231 976, trading as Boral Plasterboard, are guaranteed to be of consistent quality and free from any defects.

Boral Plasterboard products must be installed using the components and accessories specified and in accordance with the instructions detailed in Boral Plasterboard's technical literature.

Our products are manufactured to suit the requirements of the building industry in Australia.

Boral Plasterboard may limit its liability under this guarantee to, at its option, the replacement or payment of the cost of replacing OR supplying equivalent or payment of the cost of supplying equivalent OR the repair or payment of the cost of repairing products found to be defective.

## Important Note

The technical information contained within this manual was correct at the time of printing. Building Systems and details are, however, subject to change. To ensure the information you are using is current, Boral Plasterboard recommends you review the latest building information

available electronically on TecSYS (our technical catalogue on CD) or the Boral Plasterboard Website. Alternatively, contact your nearest Boral Plasterboard Sales Office or TecASSIST (see details below).

Through TecASSIST Boral Plasterboard is demonstrating its commitment to providing excellent technical service and support to design, building and construction professionals Australia wide.

A free-call architectural support line, TecASSIST is available to provide sound advice on all matters relating to drywall plasterboard construction.

Combining years of professional experience with the latest design information and technology, the TecASSIST team has the skills to help you.

Boral Plasterboard TecASSIST phone line is open to receive calls from 9.00am to 5.00pm Monday to Friday, Melbourne time (Victorian public holidays excepted).



**FREE-CALL 1800 811 222**

**24 hour fax: (03) 9645 1812**  
**email: [techdesk@plasterboard.boral.com.au](mailto:techdesk@plasterboard.boral.com.au)**

### Queensland

733 Nudgee Road Northgate 4013  
Telephone (07) 3215 2244  
Fax (07) 3215 2299

### New South Wales

3 Thackeray Street Camellia 2142  
Telephone (02) 9638 0571  
Fax (02) 9638 5557

### South Australia

113-117 Bedford Street Gillman 5013  
Telephone (08) 8240 8888  
Fax (08) 8341 1004

### Victoria

676 Lorimer Street Port Melbourne 3207  
Telephone (03) 9214 2138  
Fax (03) 9646 1912



### Export Department

676 Lorimer Street  
Port Melbourne 3207  
Telephone (03) 9214 2138  
Fax (03) 9646 1109

### Western Australia

12 Hoskins Road Landsdale 6065  
Telephone (08) 9400 2666  
Fax (08) 9302 1133

### ACT

7 Barrier Street Fyshwick 2609  
Telephone (02) 6280 4243  
Fax (02) 6280 5816

### Tasmania

93 Albert Road Moonah 7009  
Telephone (03) 6278 9966  
Fax (03) 6278 9865

### Northern Territory

Cnr Coonawarra Road & Mataram Street  
Winnellie 0820  
Telephone (08) 8984 4484  
Fax (08) 8984 3778

**Boral Plasterboard Website: <http://www.plasterboard.boral.com.au>**