

Wall Construction Detailing & Finishing Treatment Guide

Slab Junctions, Retaining Walls, Basements & Shafts, Junctions, Openings, Terminations, Attachments and services, Finishing Treatments

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INTRODUCTION

Volume 2 'Wall Construction Detailing & Finishing Treatments' forms part of a comprehensive afs rediwall® design guide which includes:

- Volume 1 – Design Performance and Compliance
- Volume 2 – Wall Construction Detailing & Finishing Treatments.
- Volume 3 – Installation Guide.

Downloads of these individual volumes are available via the Resource Centre at www.afsformwork.com.au

Disclaimer: This documentation has been prepared to meet Australian Building Code Standards and Regulations and therefore may not necessarily reflect New Zealand Building Code Requirements.

This section of the afs rediwall® Design Guide is intended to represent good building practice in

achieving structural design of rediwall®. This section is not intended in any way by AFS to represent all relevant information required on a project. It is the responsibility of those using and designing rediwall®, including but not limited to builders, designers, consultants and engineers to ensure that the use of rediwall® complies with all the relevant National Construction Code (NCC) requirements such as, but not limited to structural adequacy, acoustic, fire resistance/combustibility, thermal, and weatherproofing provisions. All diagrams, plans and illustrations used in this section, including any reinforcement shown, are supplied for indicative and diagrammatic purposes only. It remains the responsibility of those using rediwall® to ensure that reference is made to the project engineer's structural details for all construction and reinforcement requirements.

Overview

The architectural detailing and design of rediwall® for building projects requires the services of professional consultants, such as architects and engineers. This chapter has been prepared to assist consultants in project documentation and outlines a range of typical details.

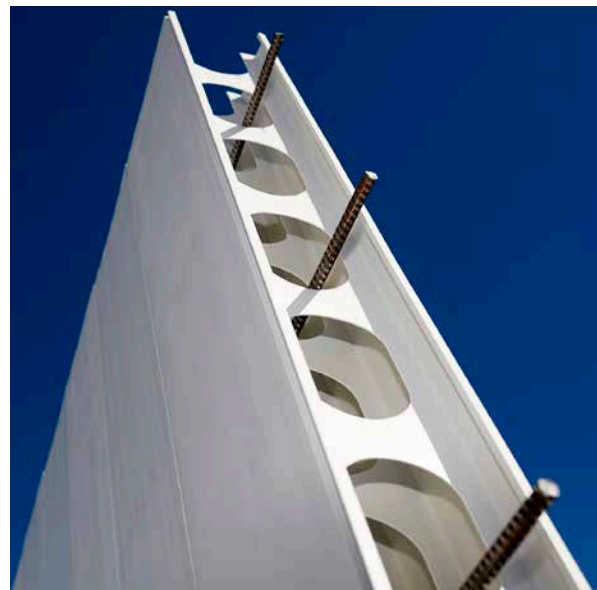
Whilst examples of previously successful details are included throughout this chapter it does not replace the services of professional consultants nor is to be relied upon as a complete library of details as site conditions can vary from project to project.

Note:

Except as noted on the following details, materials and work required are not provided by AFS or the rediwall® installation contractor.

This volume should be read in conjunction with Volume 1. Reference should be made to engineer's documentation for design details.

All details in this chapter are diagrammatic only and not drawn to scale.



CONSTRUCTION DETAILS

Refer to Fire and Acoustic section for details on alternative finishing treatments.

Slab Junctions

Fig 1: Horizontal Joint with Rebated Slab Edge

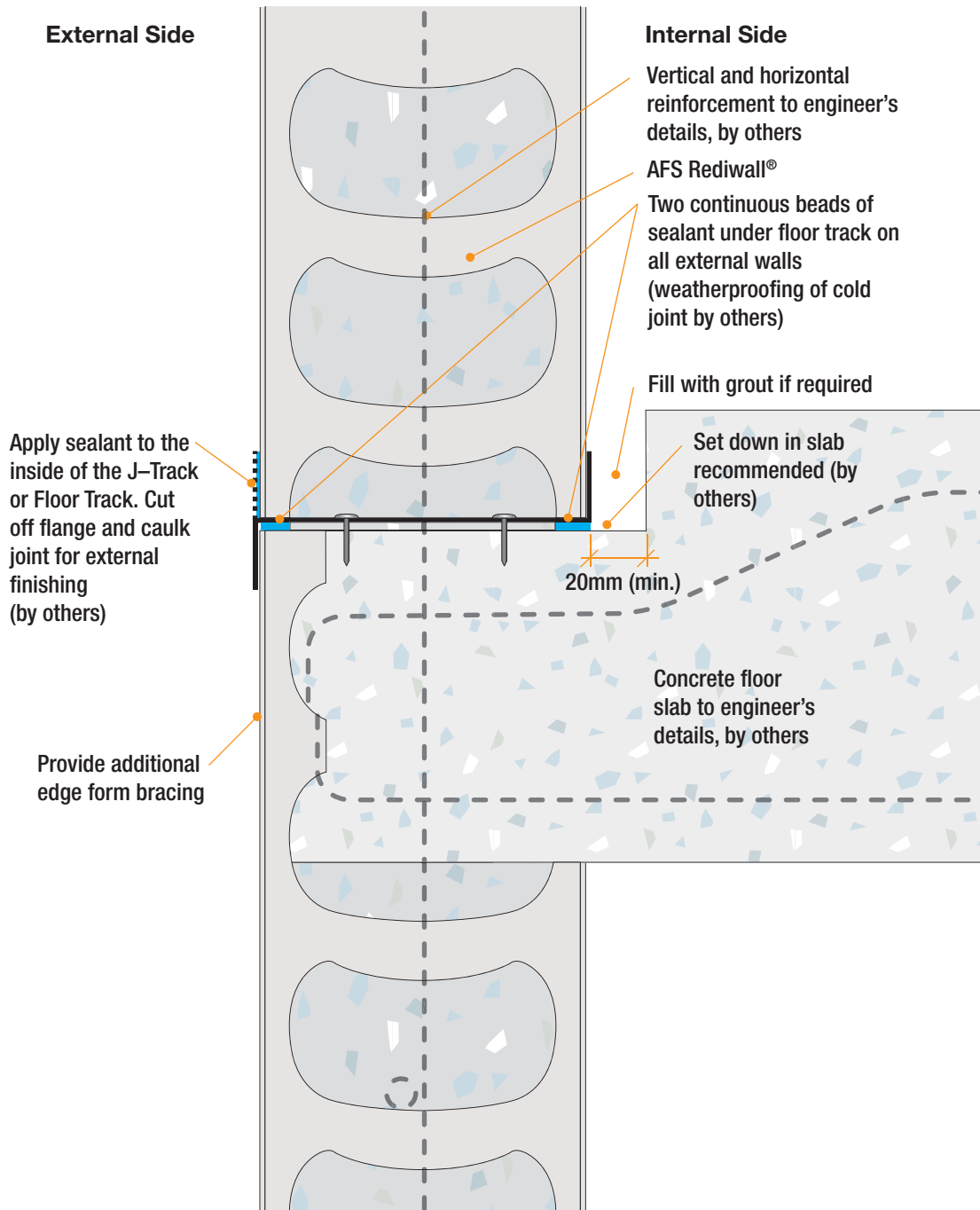


Fig 2: Wall to Slab Junction

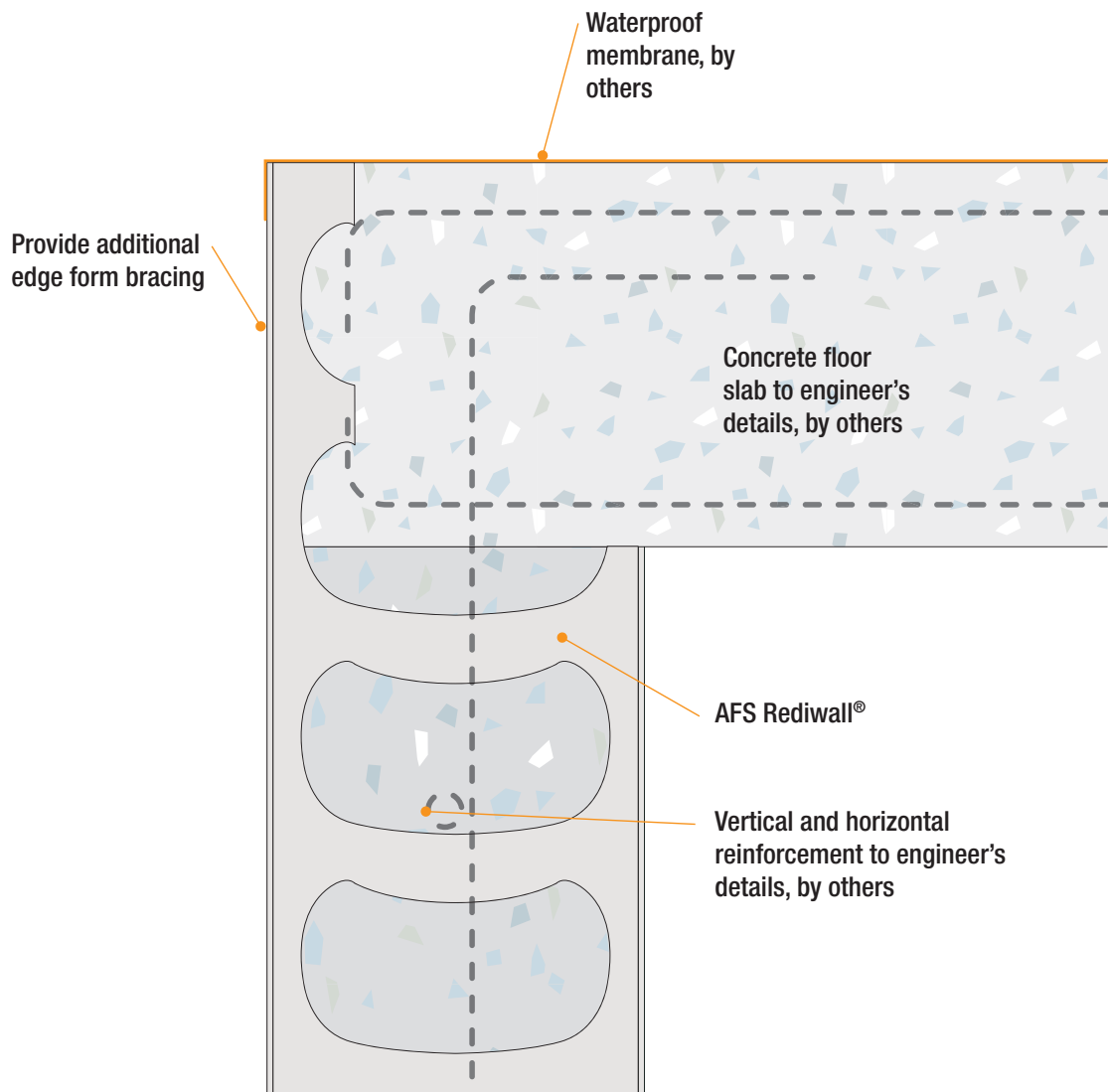


Fig 3: External Wall/Slab Junction at Typical Raft Slab Above Ground

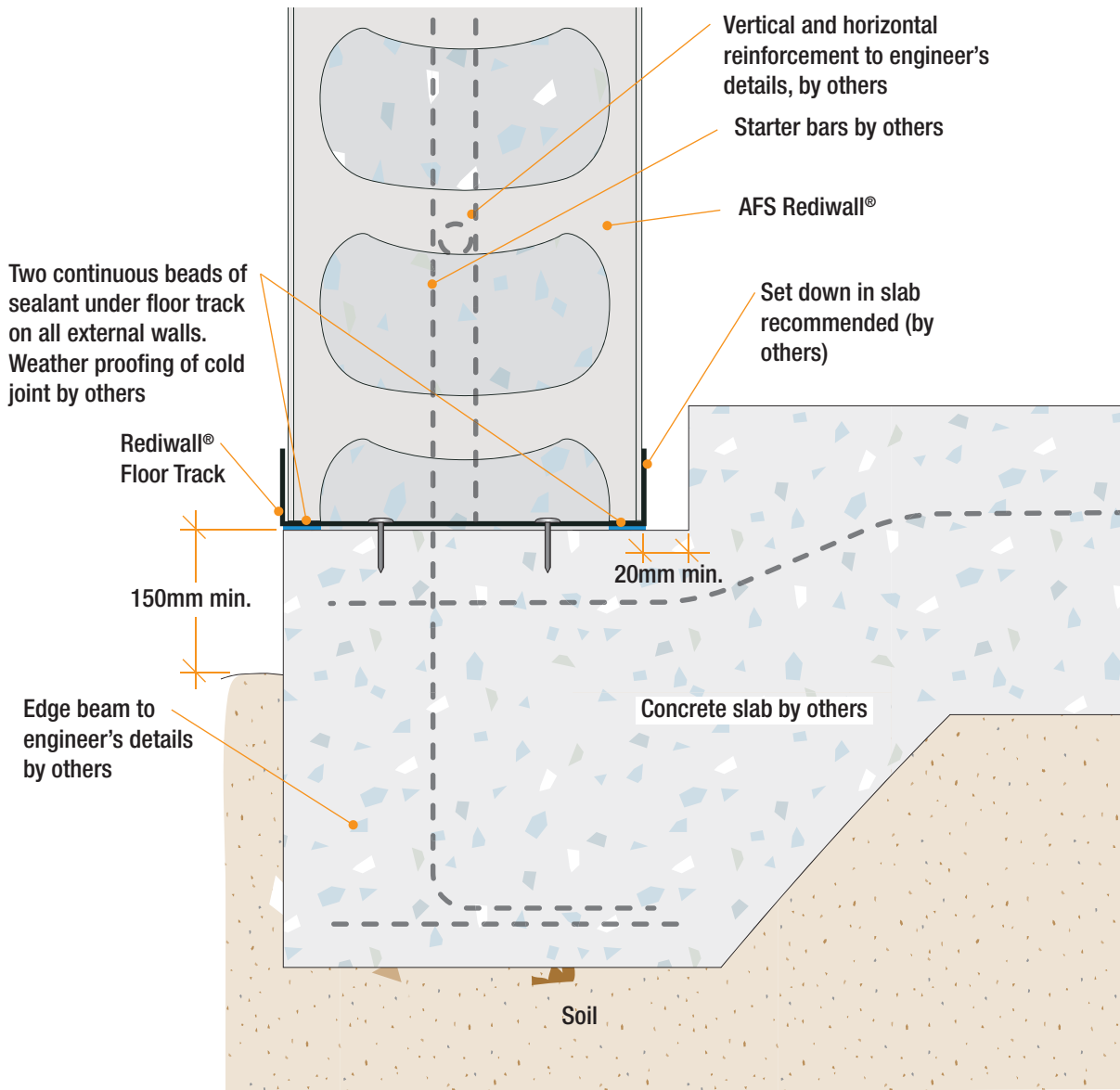


Fig 4: Balcony Wall

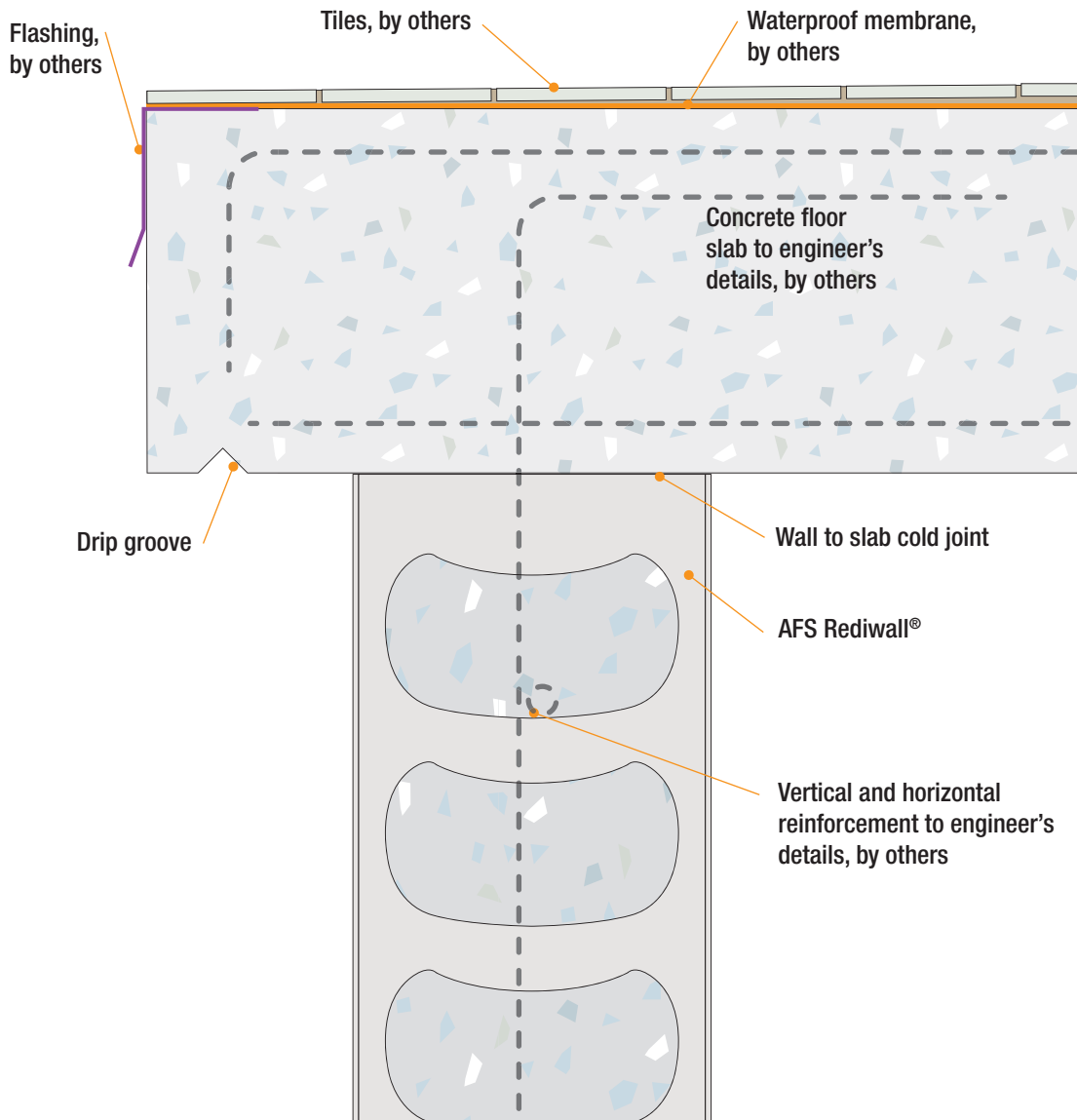


Fig 5: Step Floor or Stair Landing Within a Fire Isolated Void

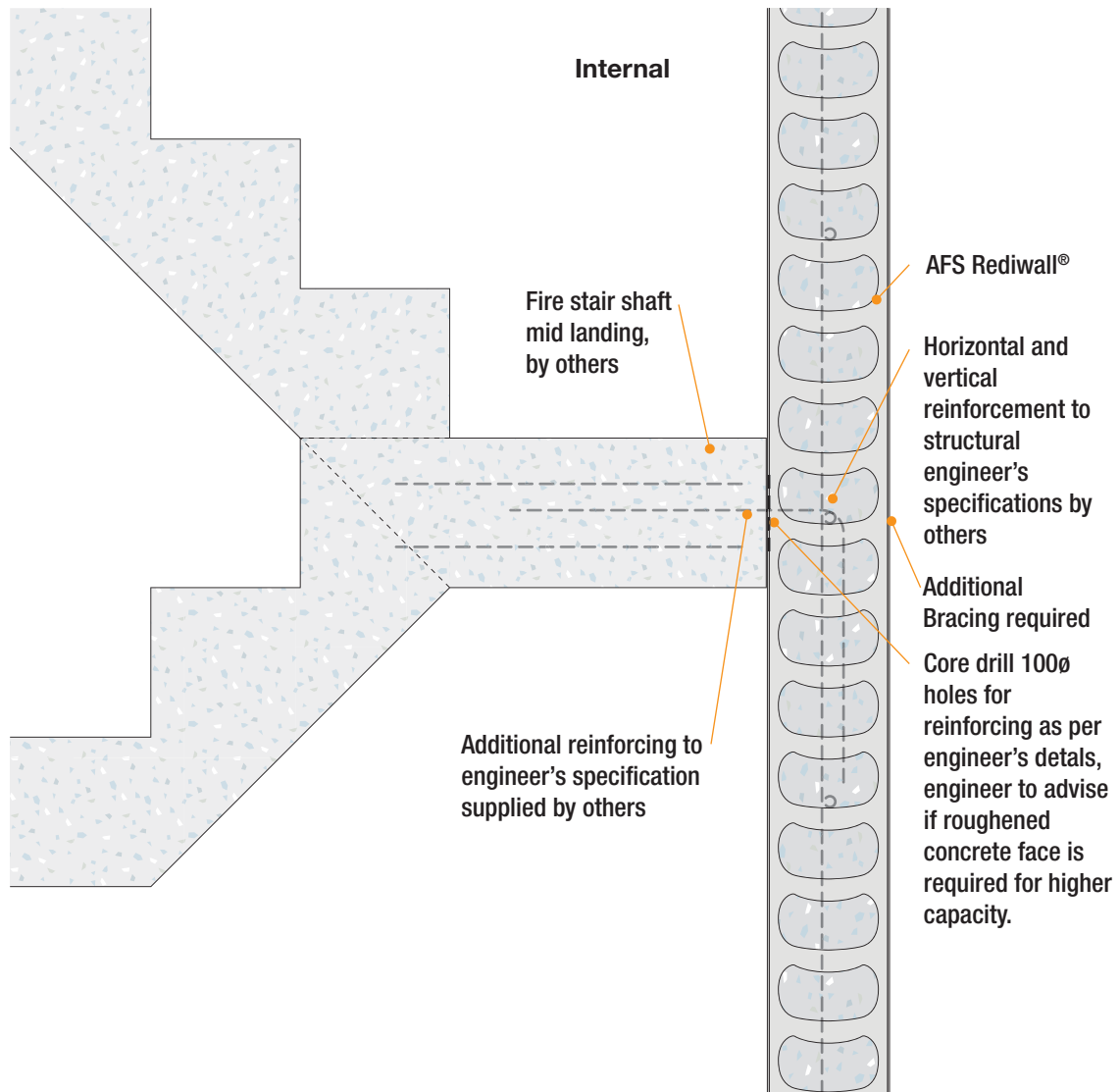


Fig 6: Junction with Post-Tensioned Slab (Internal Wall)

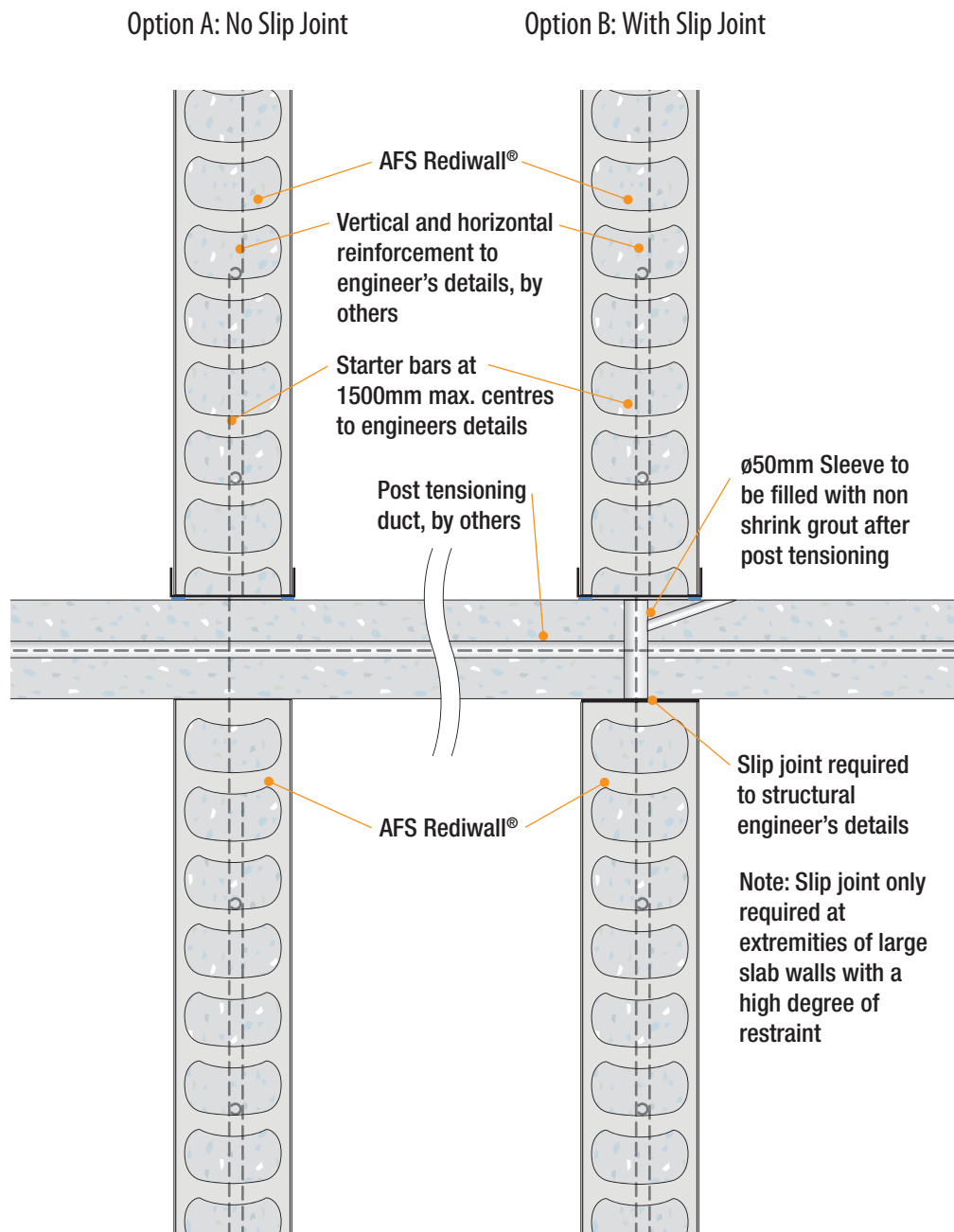
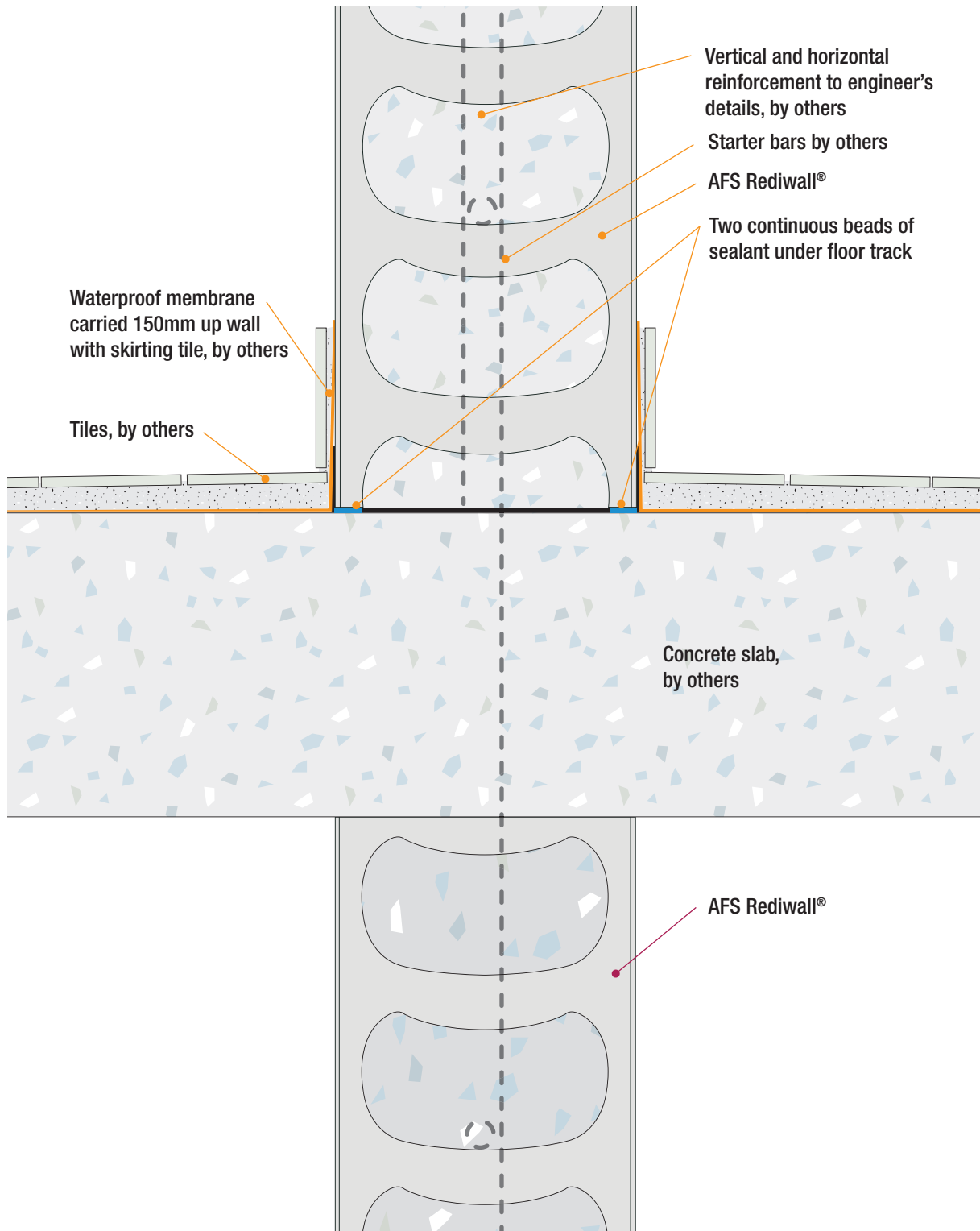


Fig 7: Balcony Dividing Wall



Retaining Walls

Fig 8: Retaining Wall or Basement Wall to Slab Junction

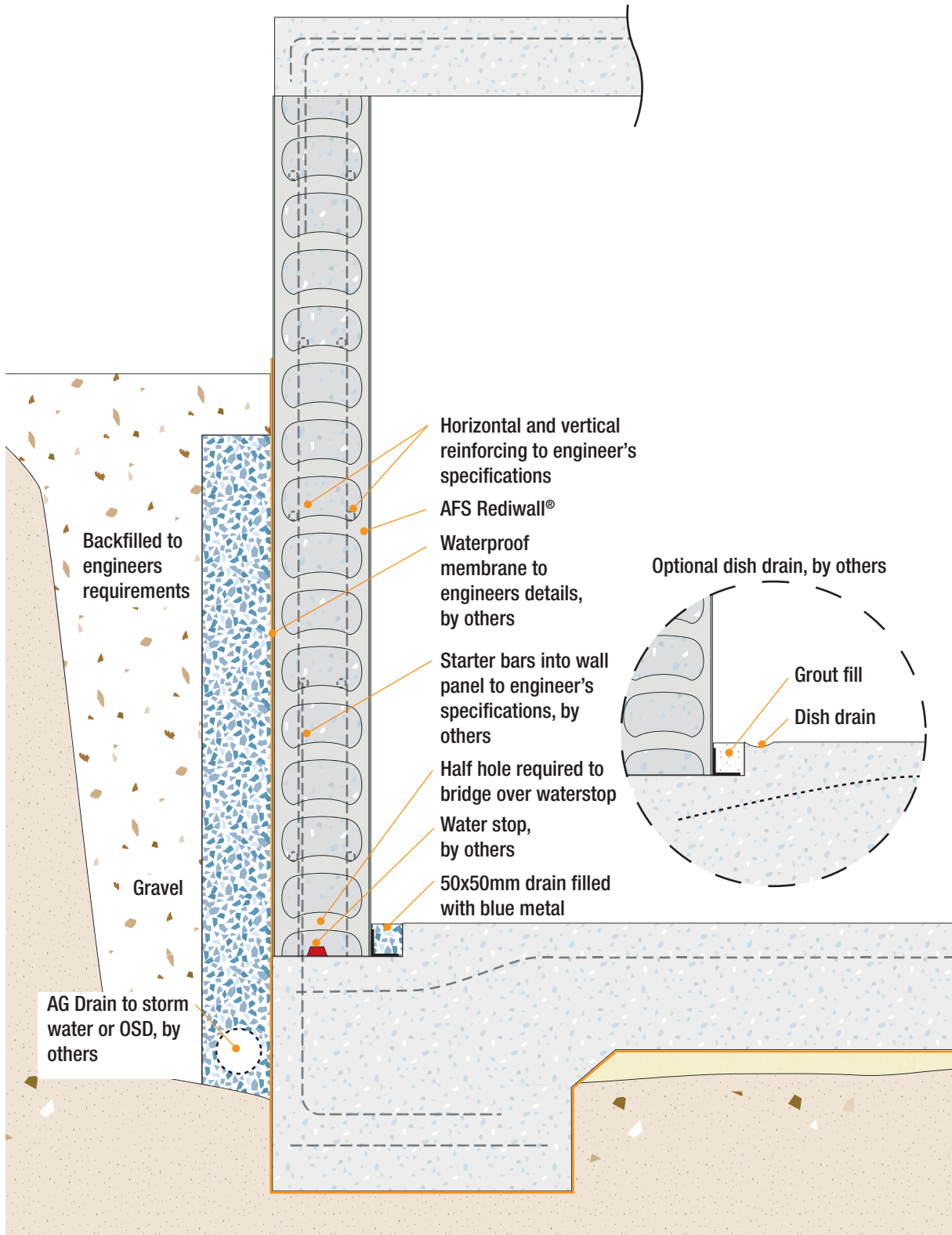


Fig 9: Cantilevered Retaining Wall (maximum height 3400mm)

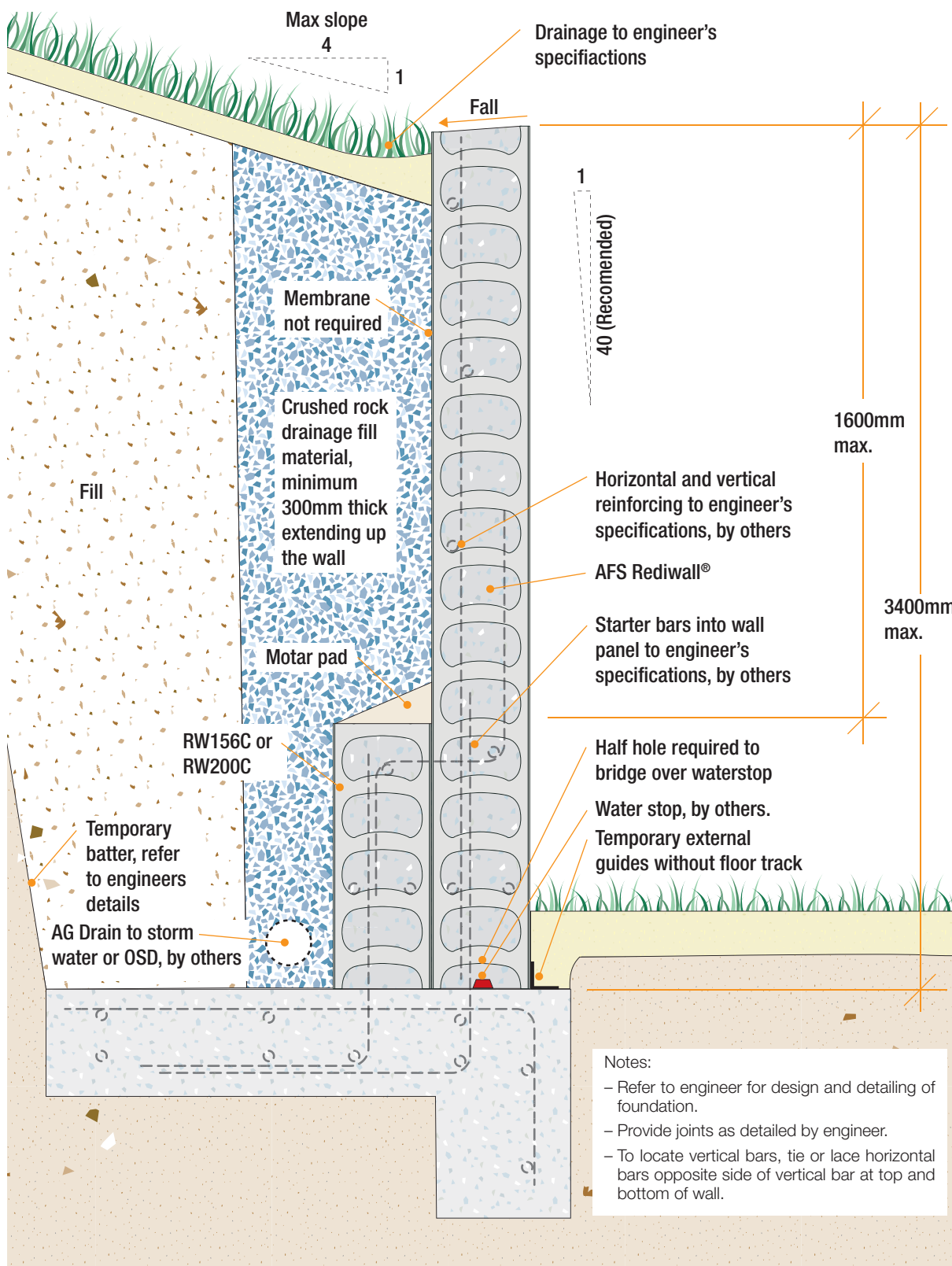
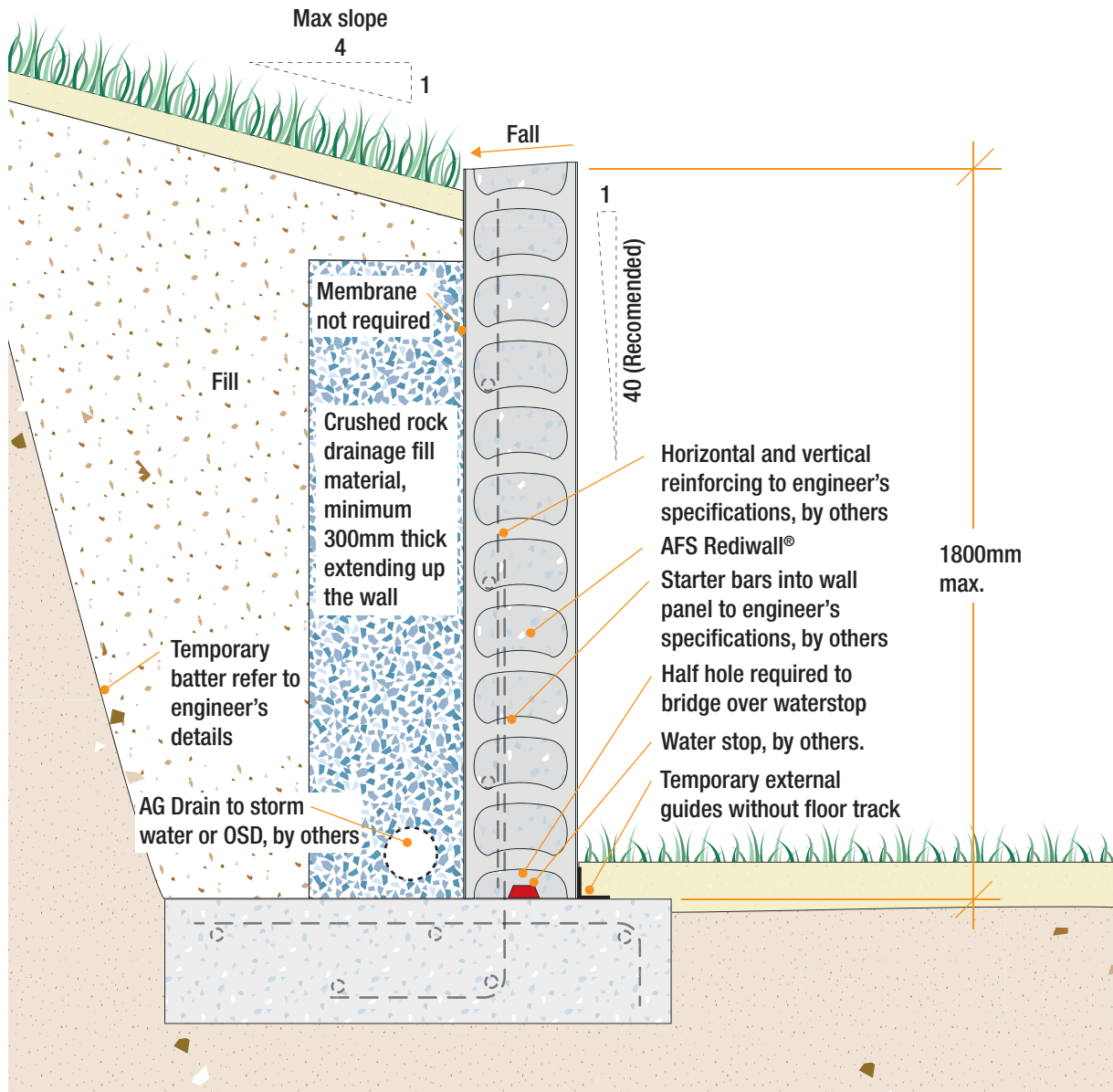


Fig 10: Cantilevered Retaining Wall (maximum height 1800mm)

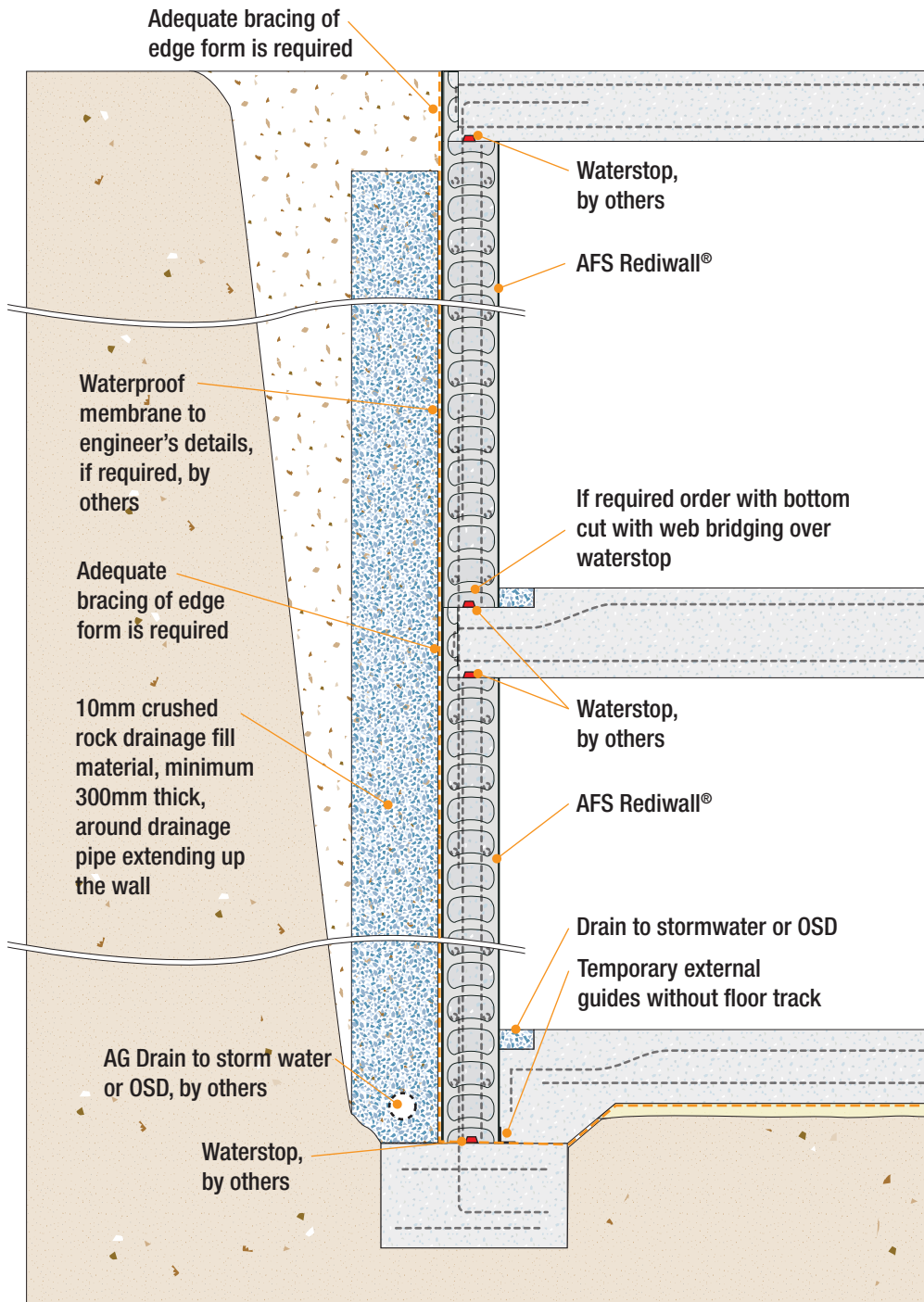


Notes:

- Refer to engineer for design and detailing of foundation.
- Provide joints as detailed by engineer.
- To locate vertical bars, tie or lace horizontal bars opposite side of vertical bar at top and bottom of wall.

Basements and Shafts

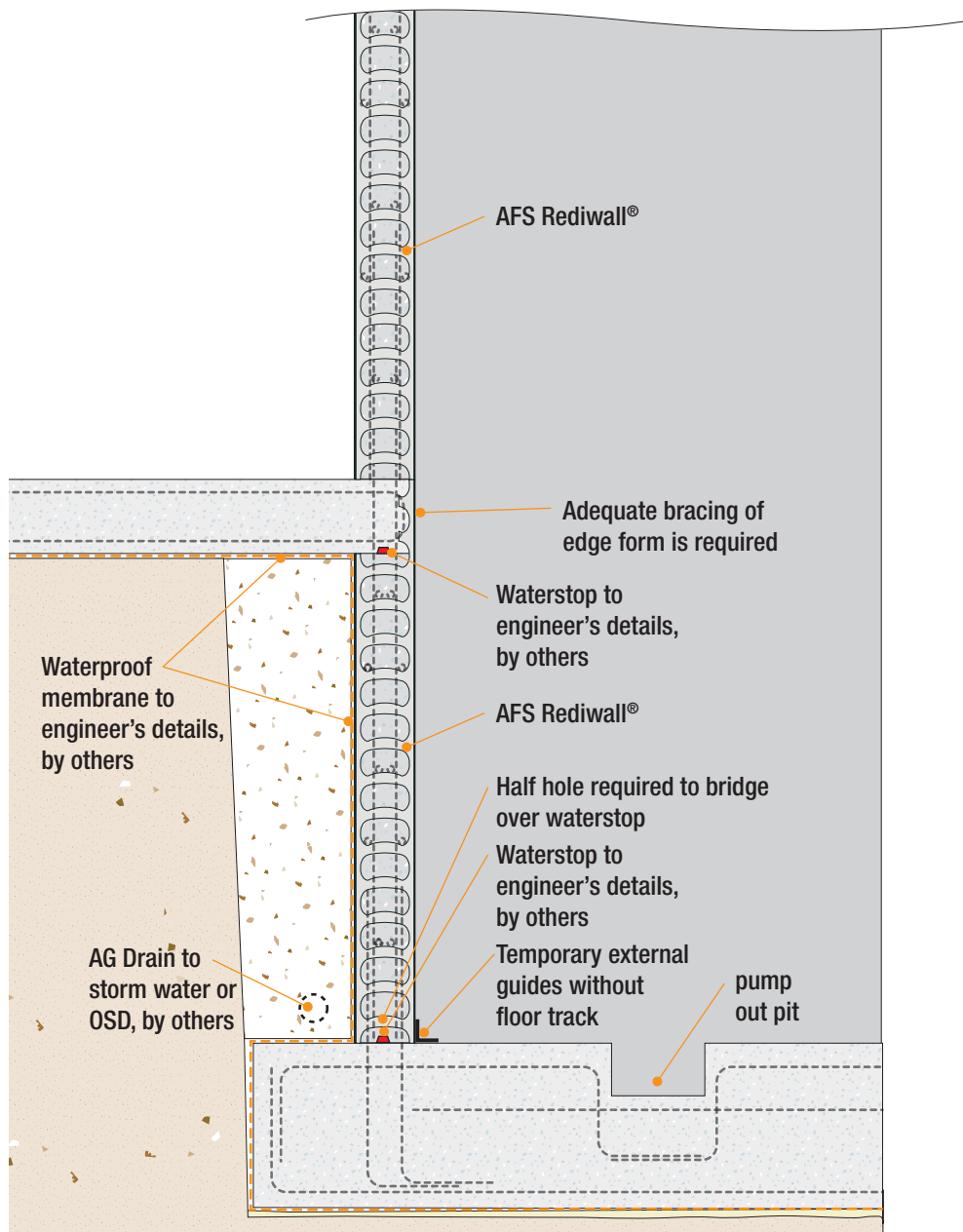
Fig 11: Typical Basement



Notes:

- Refer to engineer for design and detailing of foundation.
- Provide joints as detailed by engineer.
- To locate vertical bars, tie or lace horizontal bars opposite side of vertical bar at top and bottom of wall.

Fig 12: Typical Lift Pit

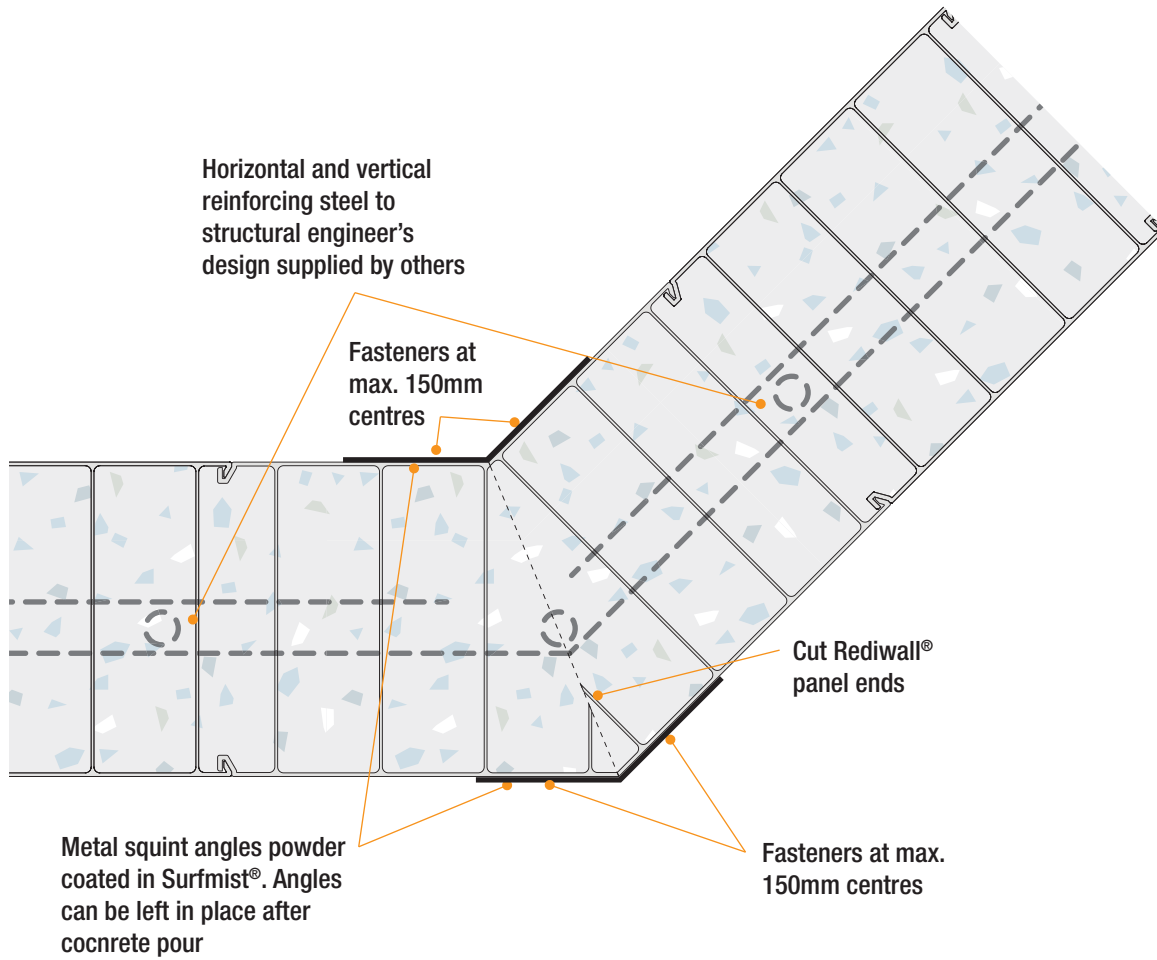


Notes:

- Refer to engineer for design and detailing of foundation.
- Provide joints as detailed by engineer.
- To locate vertical bars, tie or lace horizontal bars opposite side of vertical bar at top and bottom of wall.

Junctions

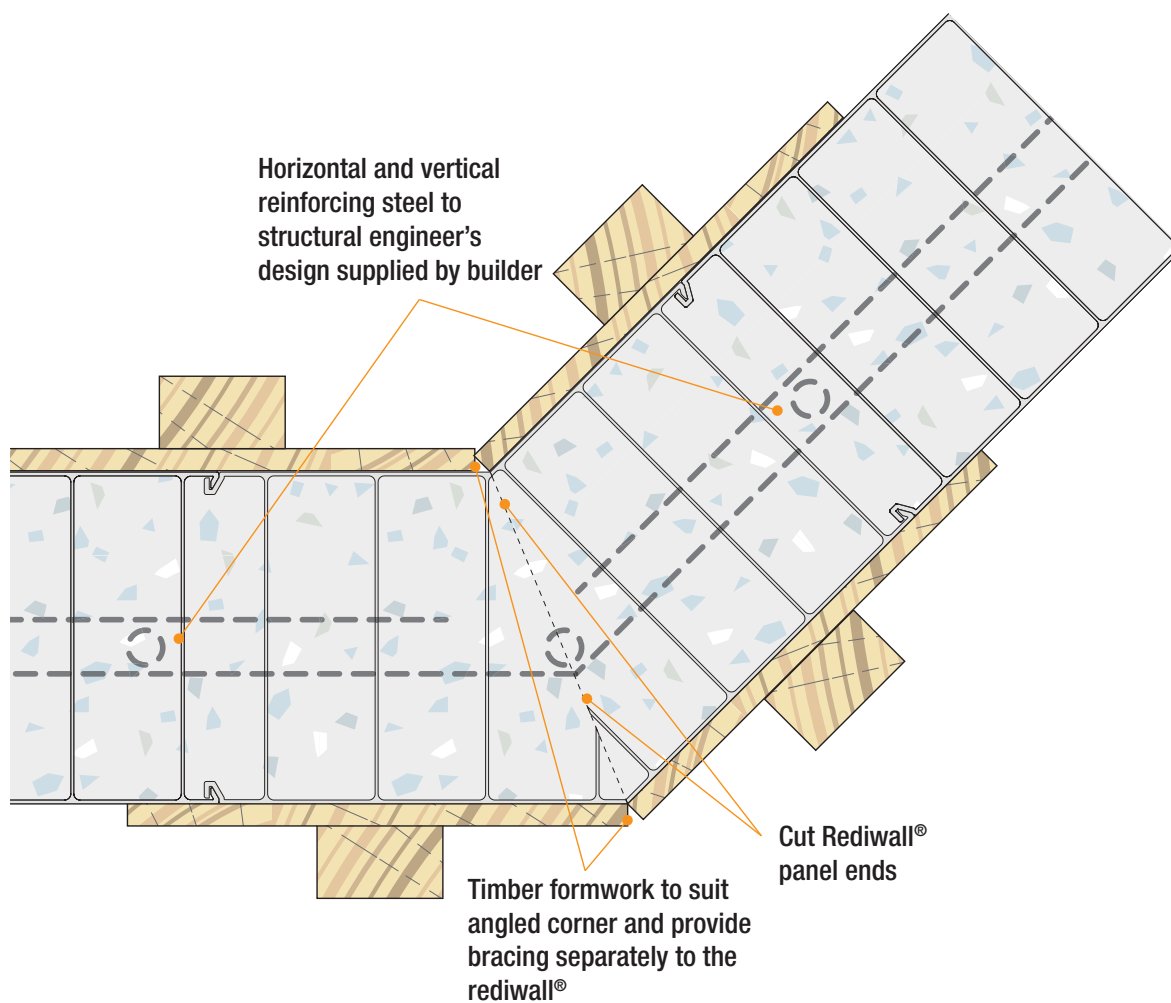
Fig 13: Corners with Squint Angles



Notes:

- Refer to Volume 3 – Installation Guide for bracing details.

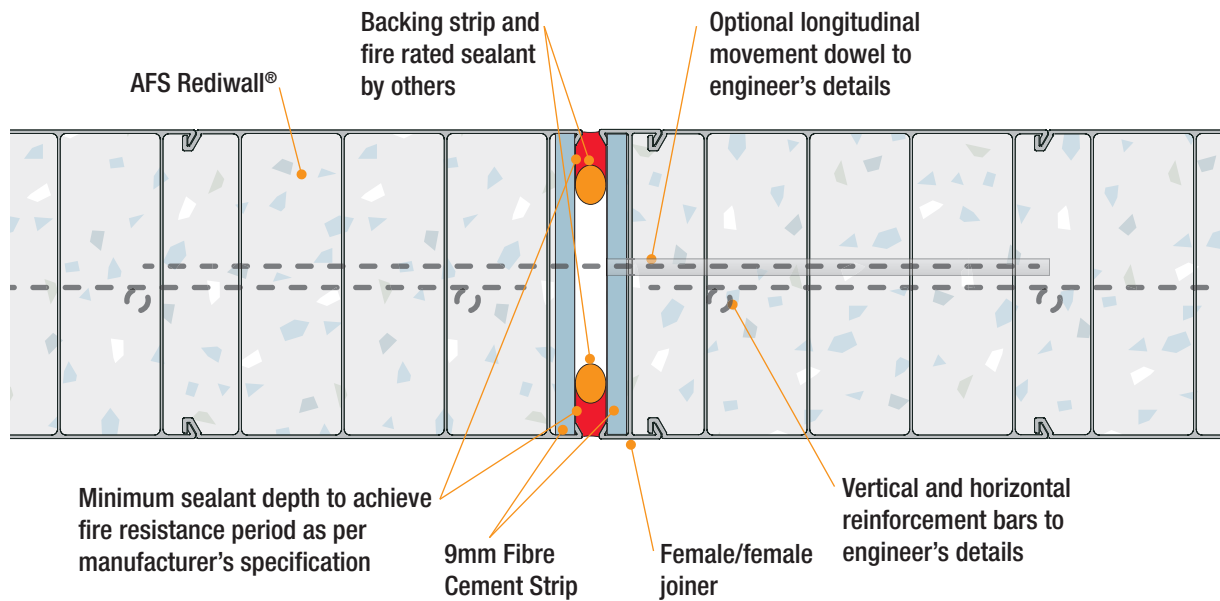
Fig 14: Corners with Timber Formwork



Notes:

- Refer to Volume 3 – Installation Guide for bracing details.

Fig 15: Movement Joint – Vertical Junction



Notes:

- Can be dowel jointed if required structurally.
- Fire rating to be considered in project specifications.
- Refer to Volume 1 – Design, Performance & Compliance Guide, specific wall applications section to determine where this detail can be applied.

Fig 16: Double Height Wall – Horizontal Joint

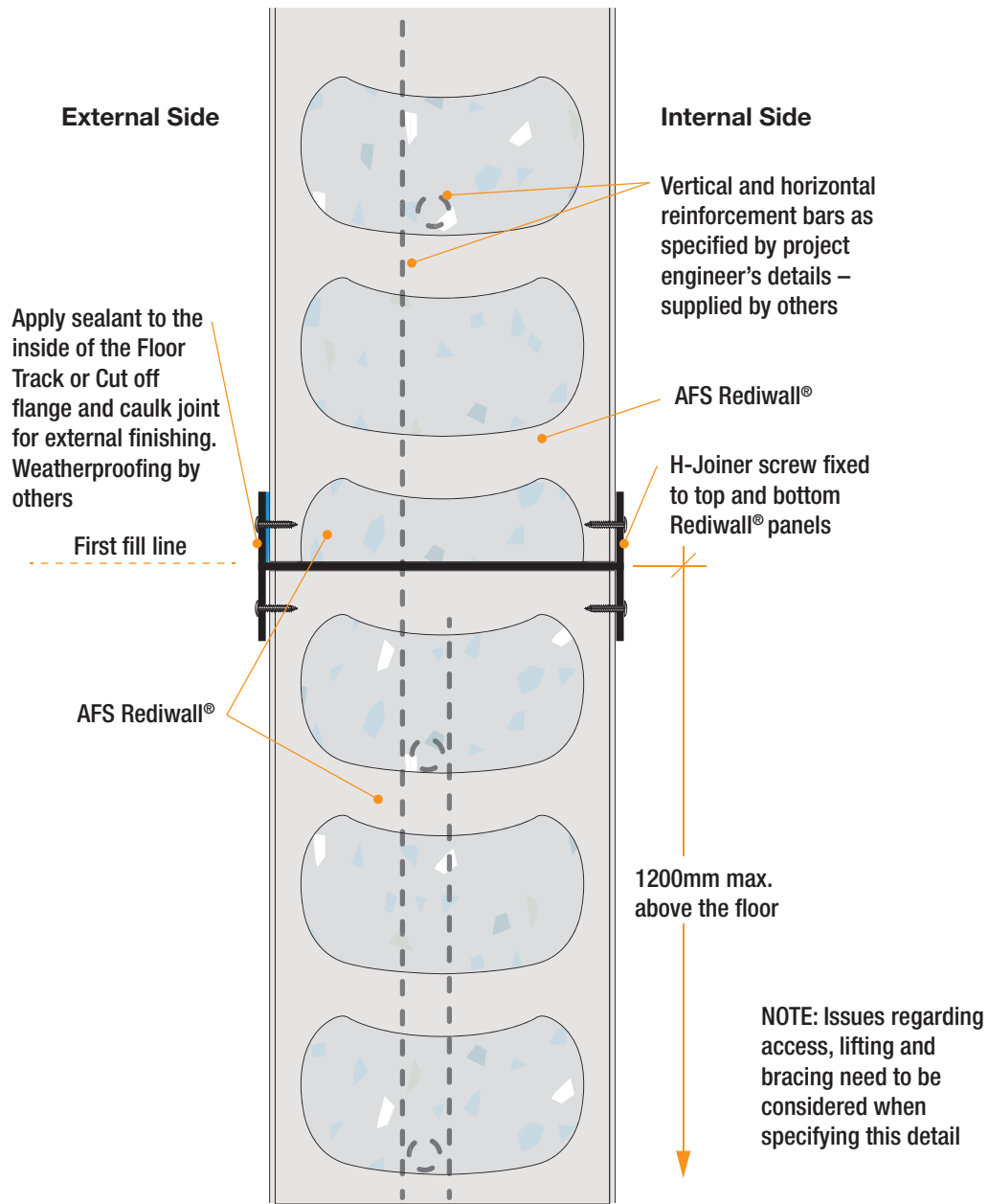
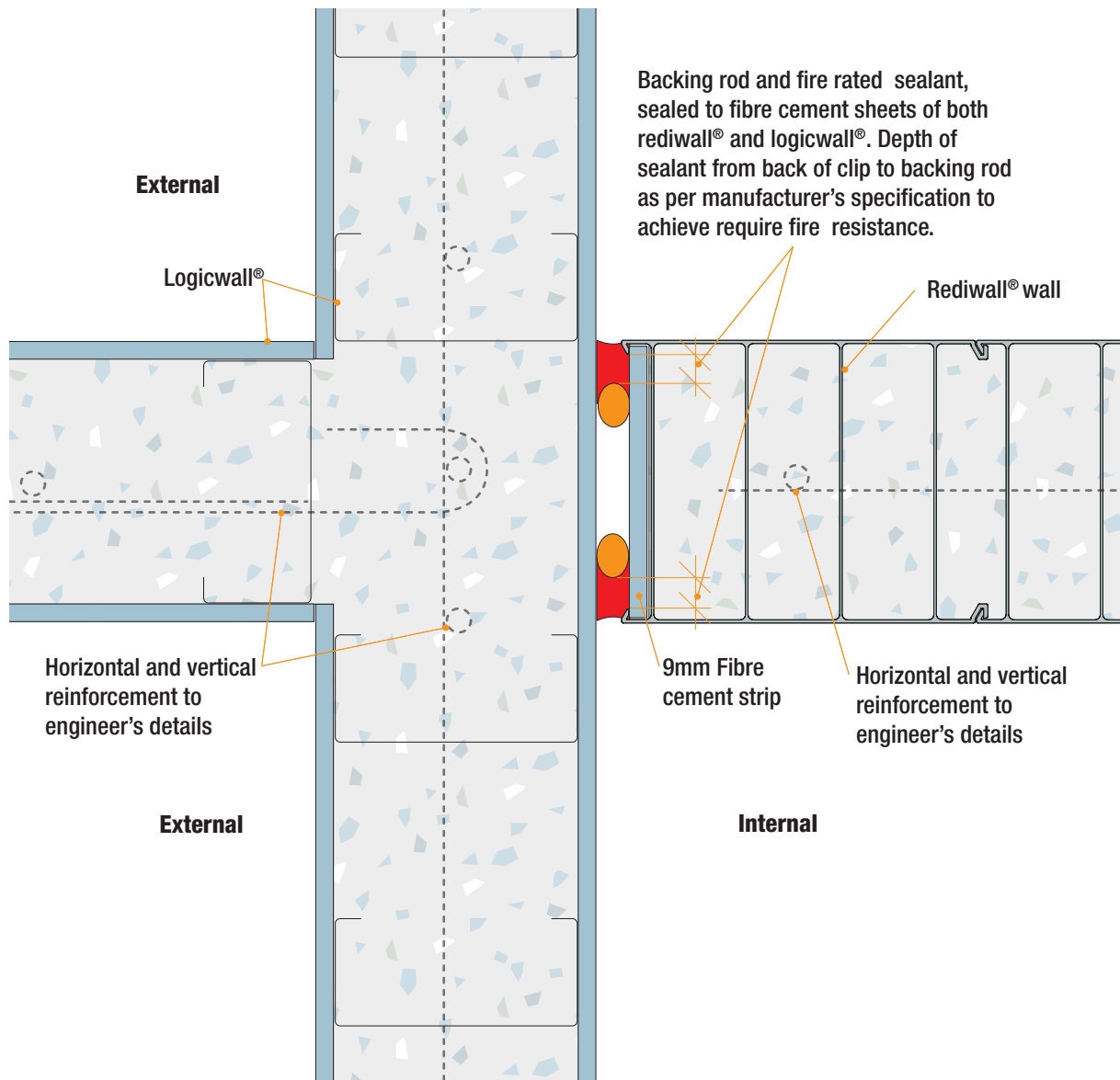


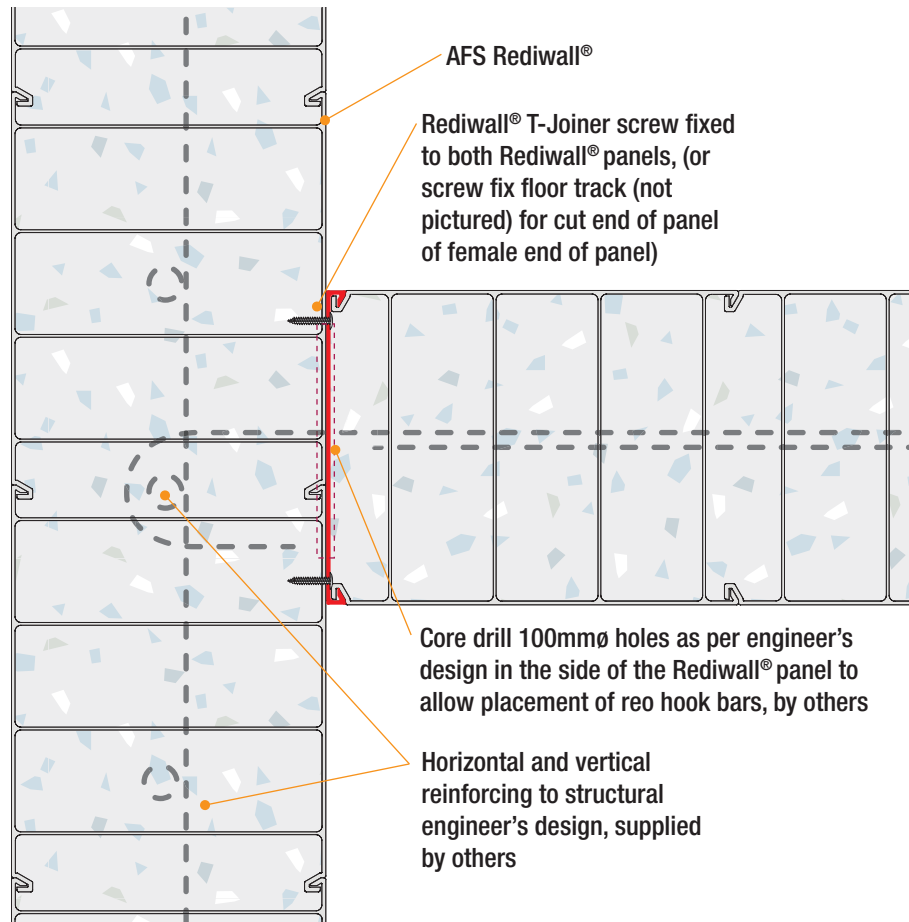
Fig 17: Junction of Rediwall® Party Wall and External Fire Rated Wall



NOTES:

Refer to Volume 1 – Design, Performance & Compliance Guide, specific wall applications section to determine where this detail can be applied.

Fig 18: Rediwall® T-Junction



NOTES:

Refer to Volume 1 – Design, Performance & Compliance Guide, specific wall applications section to determine where this detail can be applied.

Fig 19: Timber Floor Junction

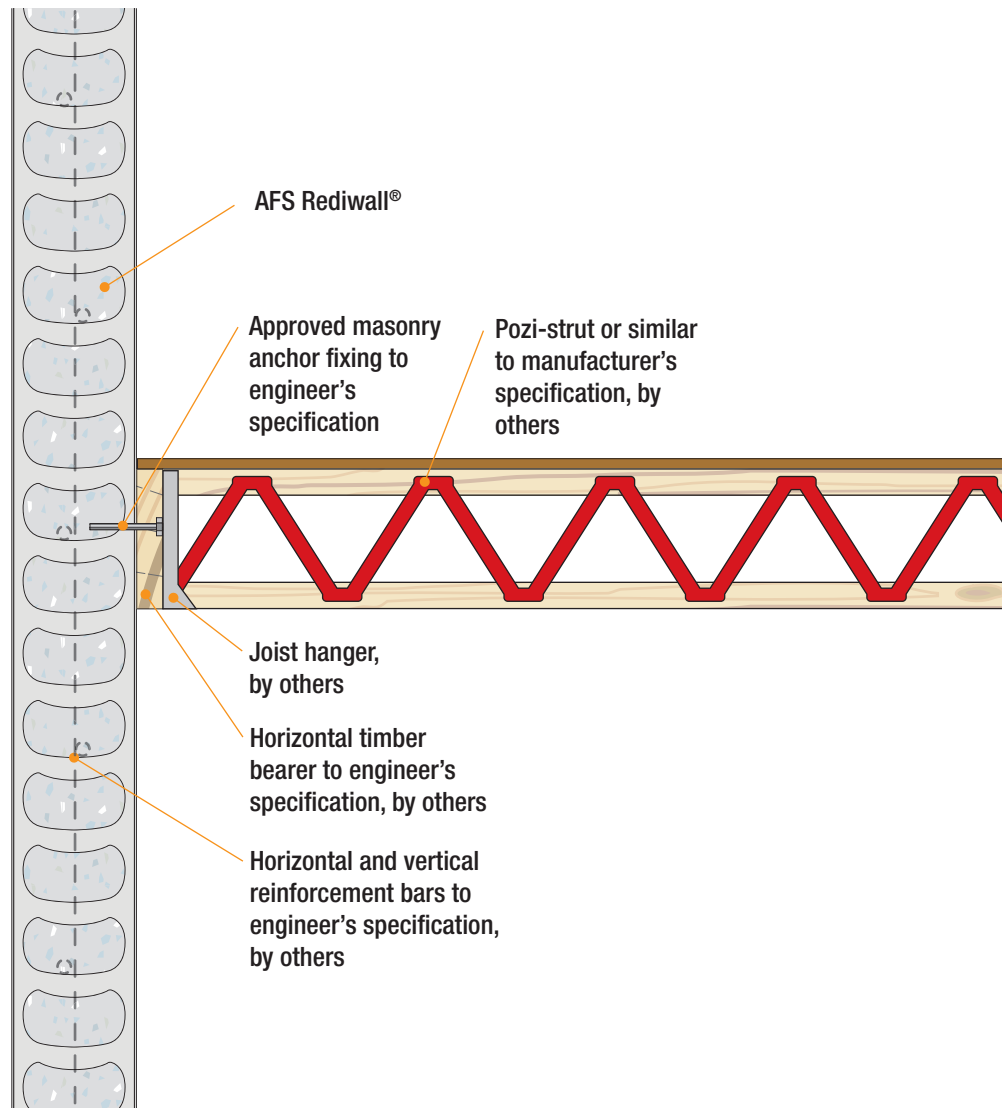
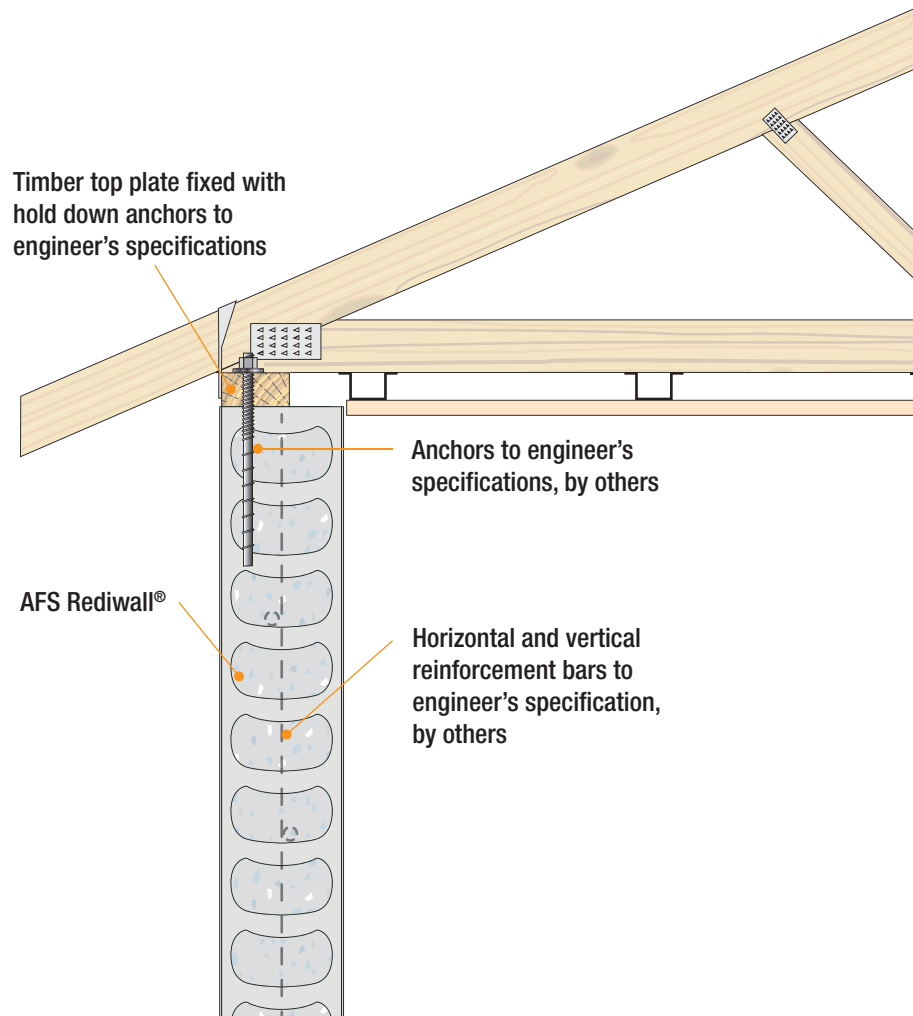
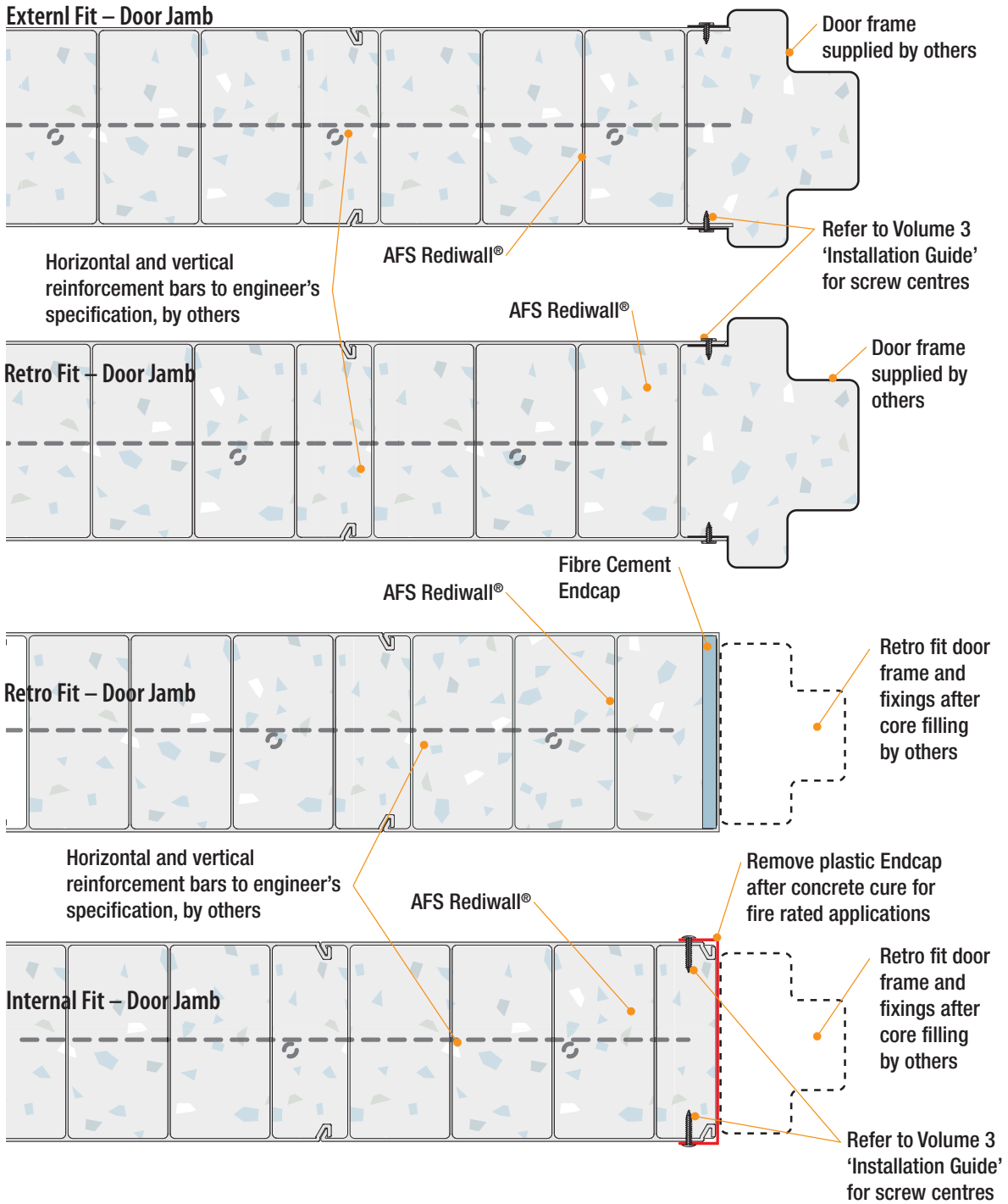


Fig 20: Timber Top Plate Connection



Openings & Wall Terminations

Fig 21: Door Jamb Options



Notes:

Always refer to door frame supplier for specific details on installation arrangement of frame to wall to ensure installation complies with door frame supplier's certification.

Fig 22: End Cap Options

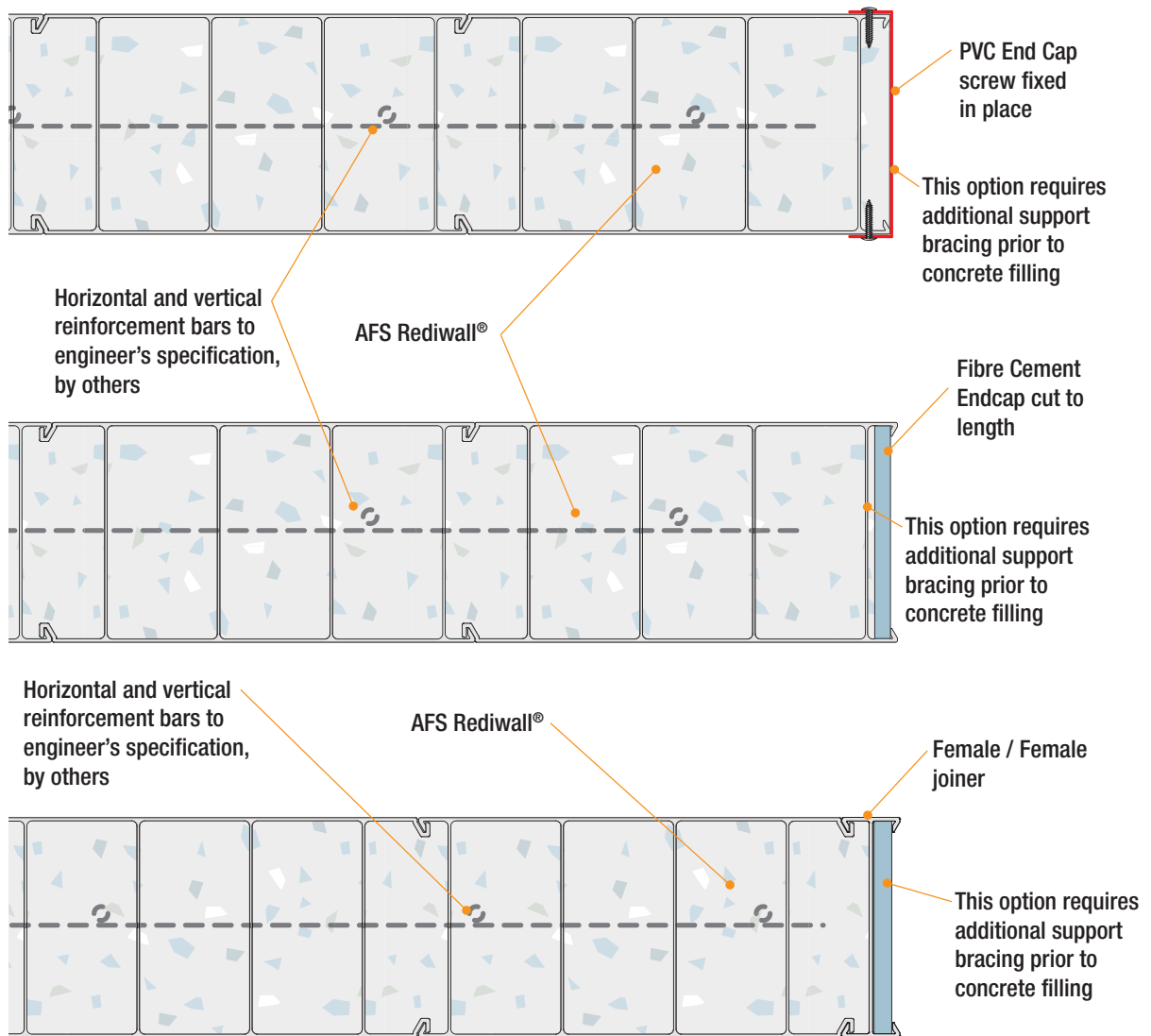
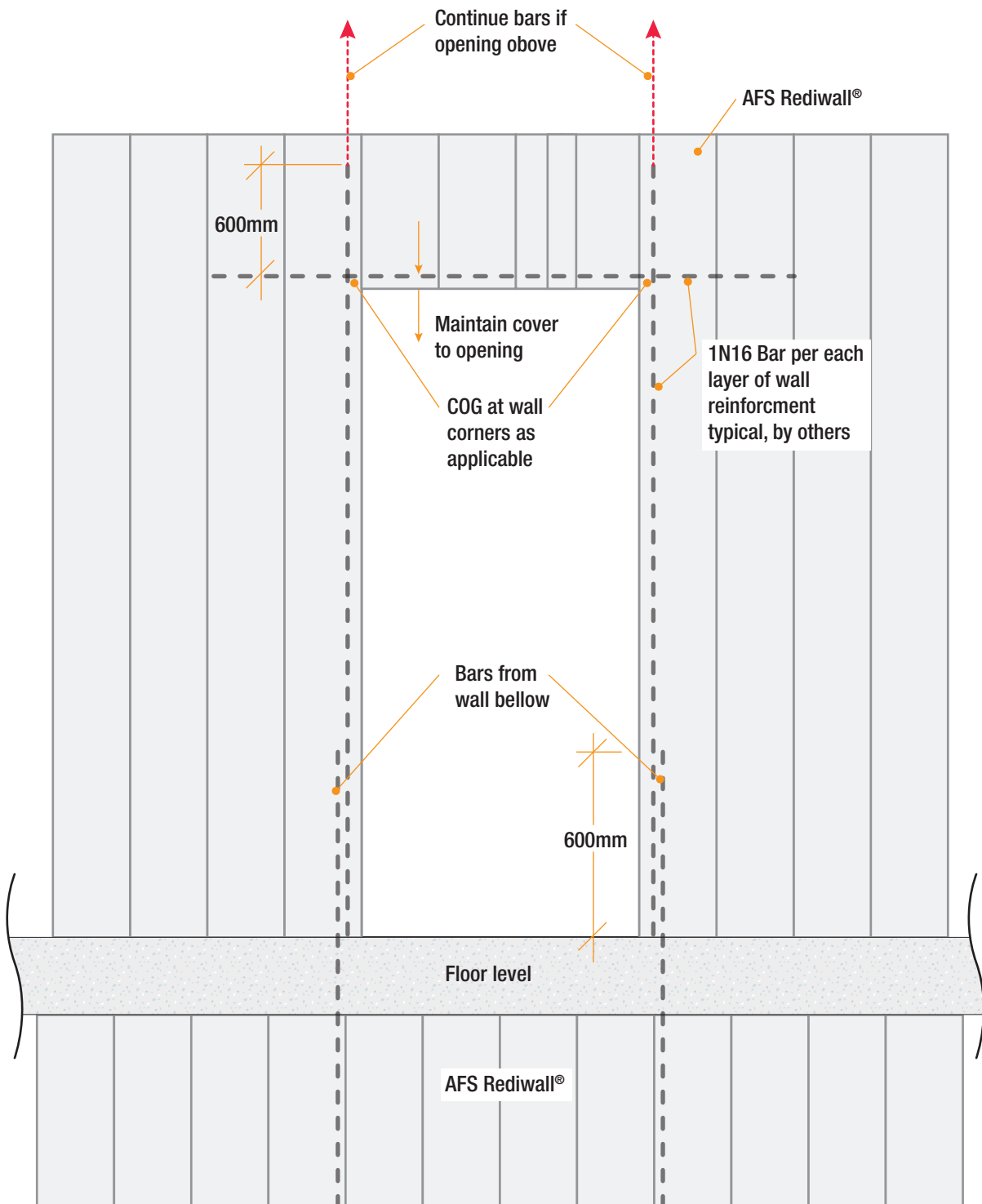
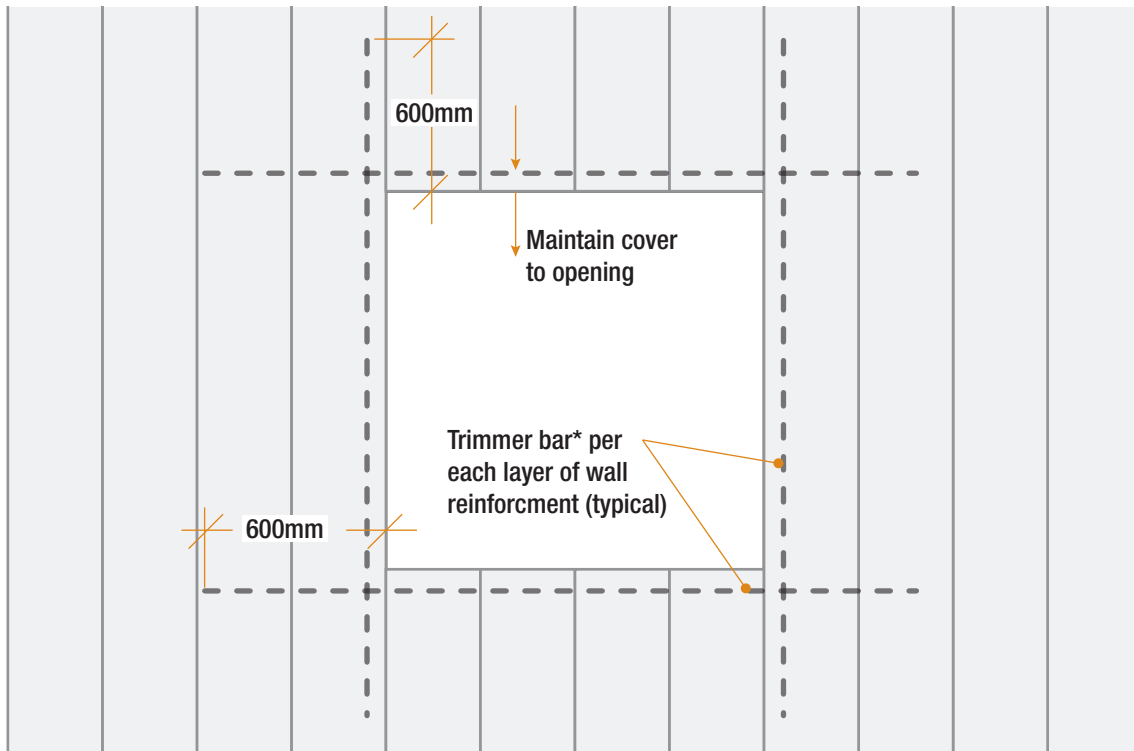


Fig 23: Typical Door Opening



Notes:
 Always refer to engineer's details for specific reinforcement requirements for the door opening

Fig 24: Typical Wall Penetration



*Trimmer bars recommendations	
Wall penetration size (mm)	Recommended minimum trimmer bar size
250 – 600	1N12
601 – 1200	1N16

Alternatively refer to engineer's details.

Notes:

Always refer to engineer's details for specific reinforcement requirements for opening penetrations.

Fig 25: Typical Opening in Rediwall® - Side Elevation View

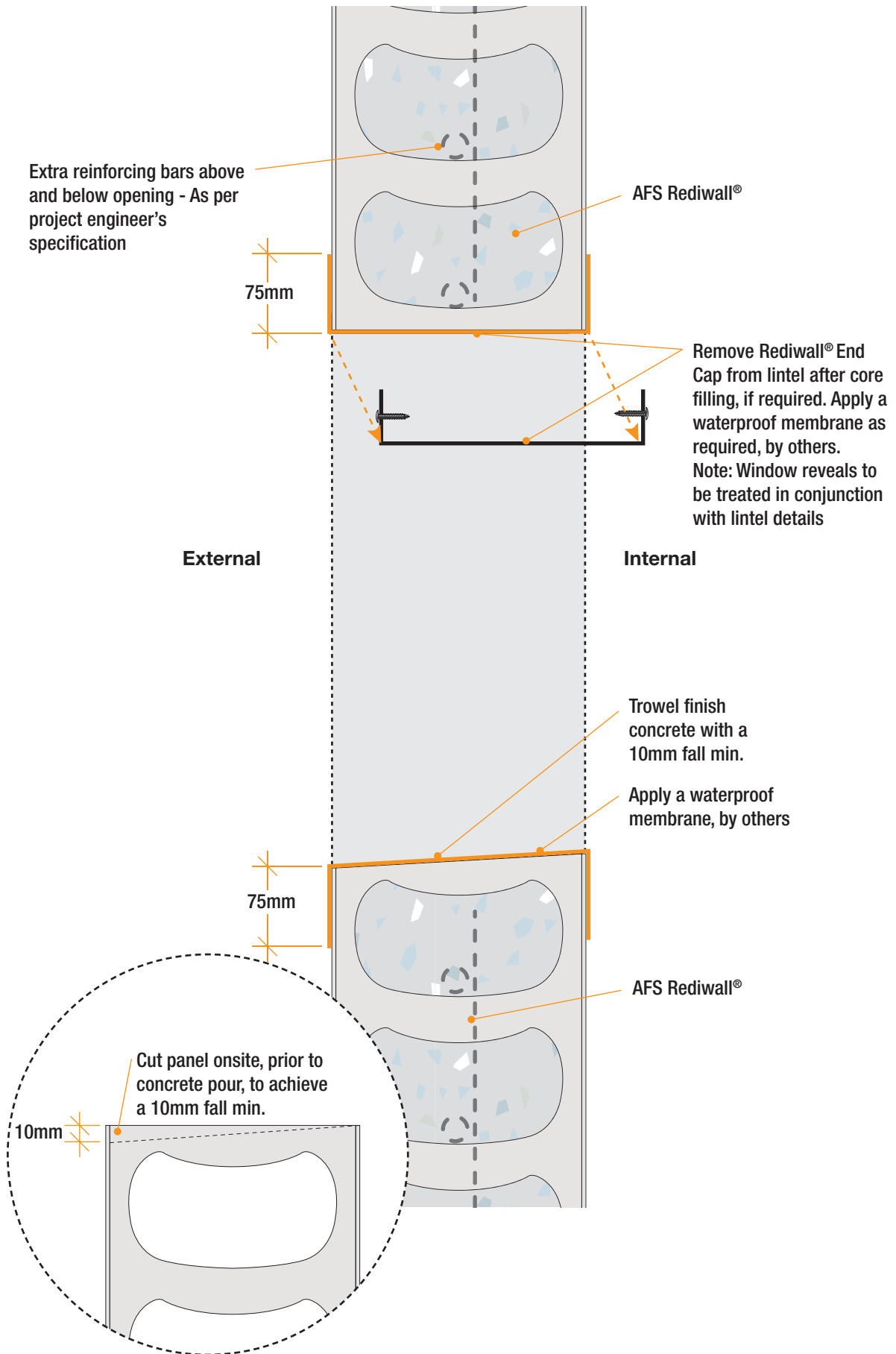


Fig 26: Window Opening - Side Elevation View

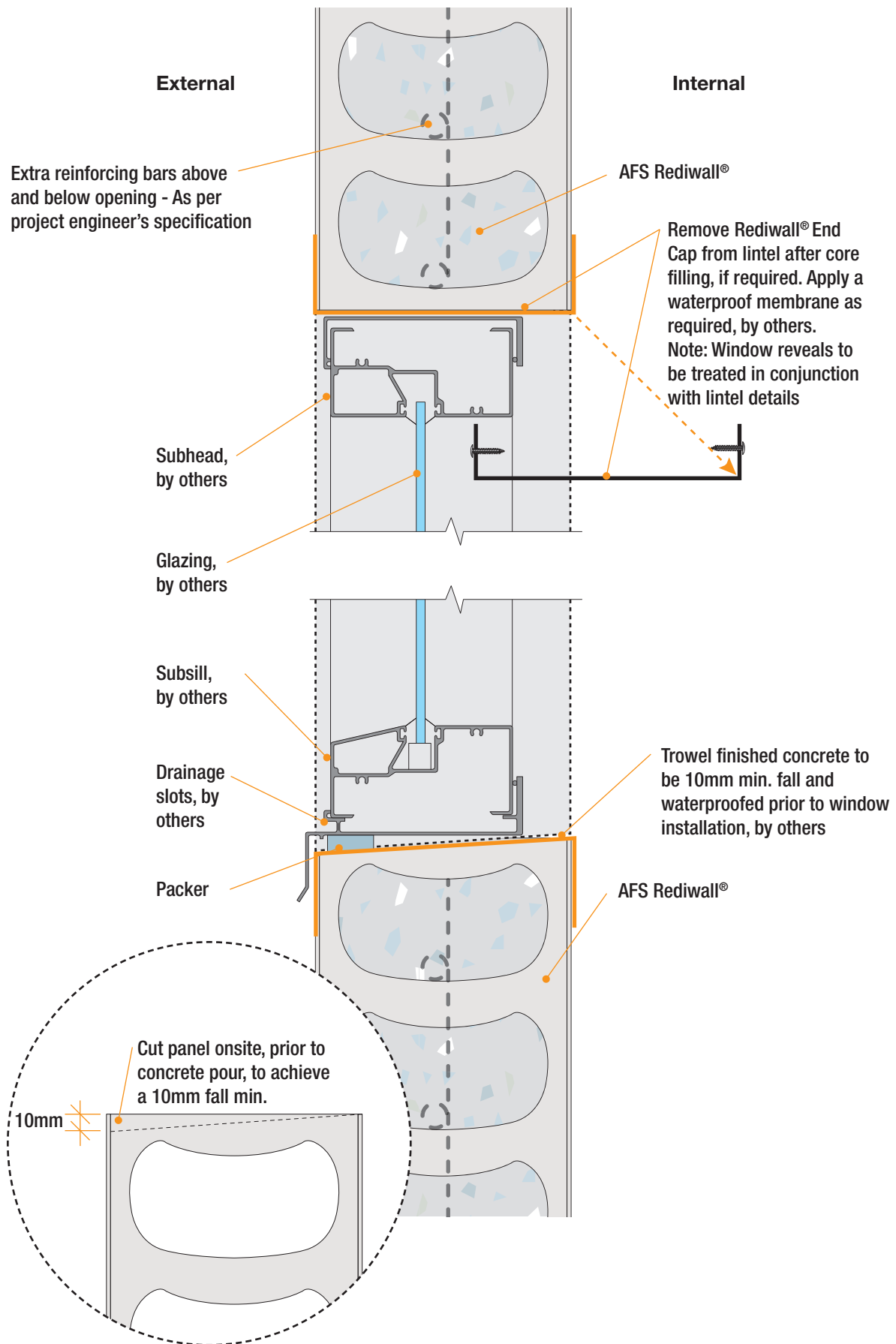
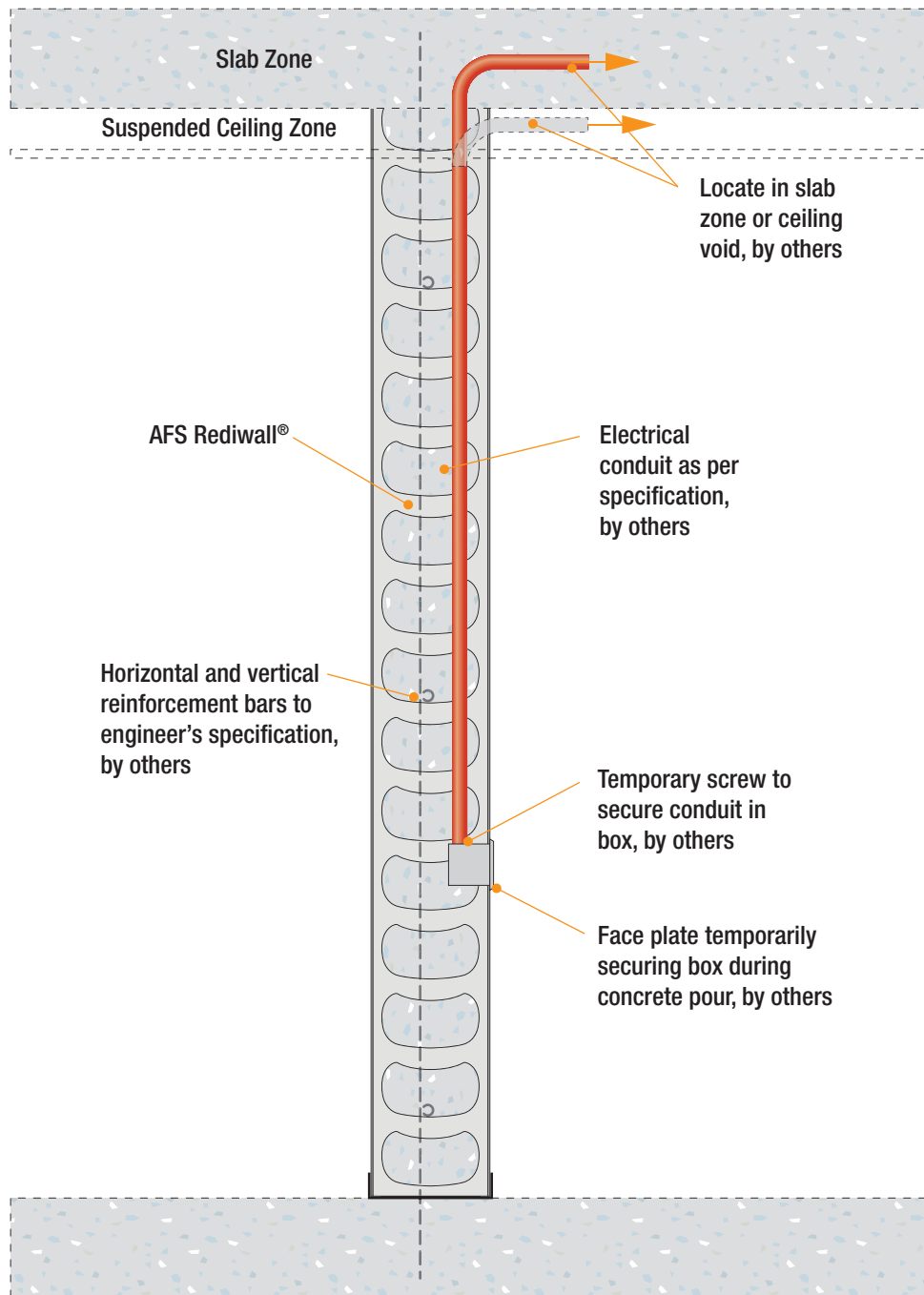


Fig 27: Services



Notes:

- Only non pressure services to be installed inside rediwall®
- Consideration to be given to fire and acoustic design when installing service boxes.

Wall Systems

Fig 28: Typical Party Wall Detail (Continuous Construction)

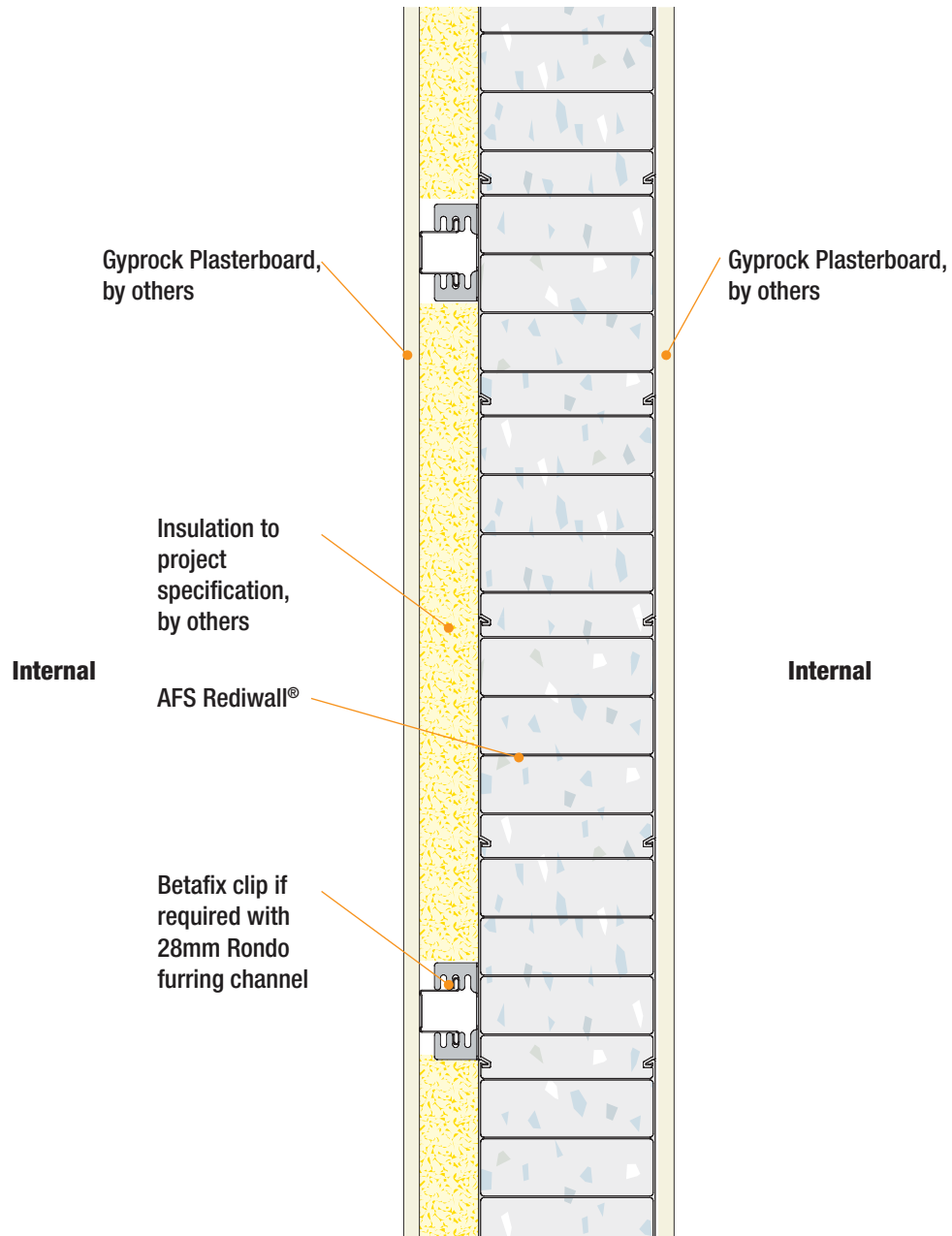


Fig 29: Typical Rediwall® External Wall with Internal Plasterboard Lining on Furring Channel (Continuous Construction)

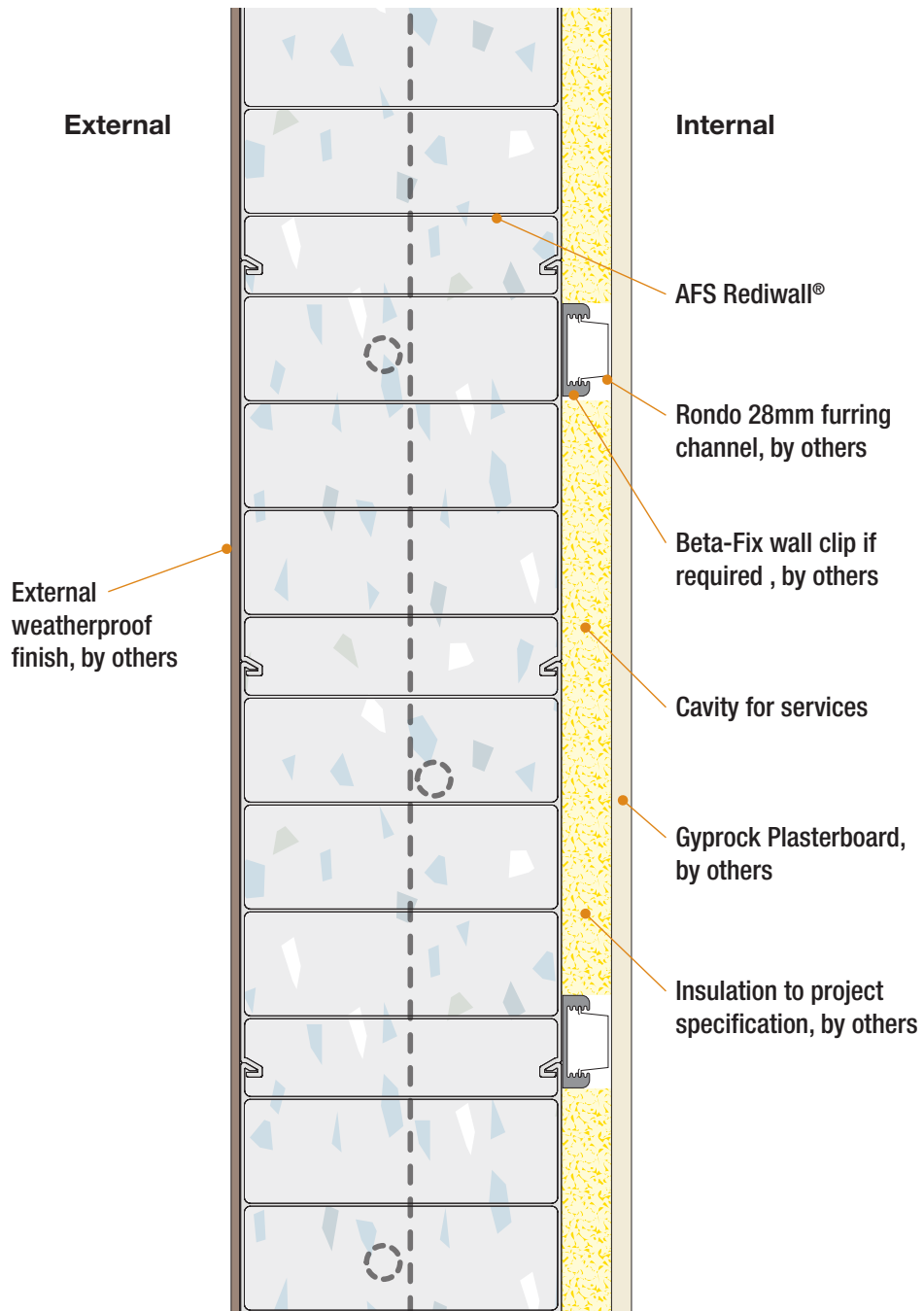


Fig 30: Typical Separating Wall (Discontinuous Construction)

Wet Area/Living Area or Wet to Wet Area (where Plumbing Services are to be installed to one side only)

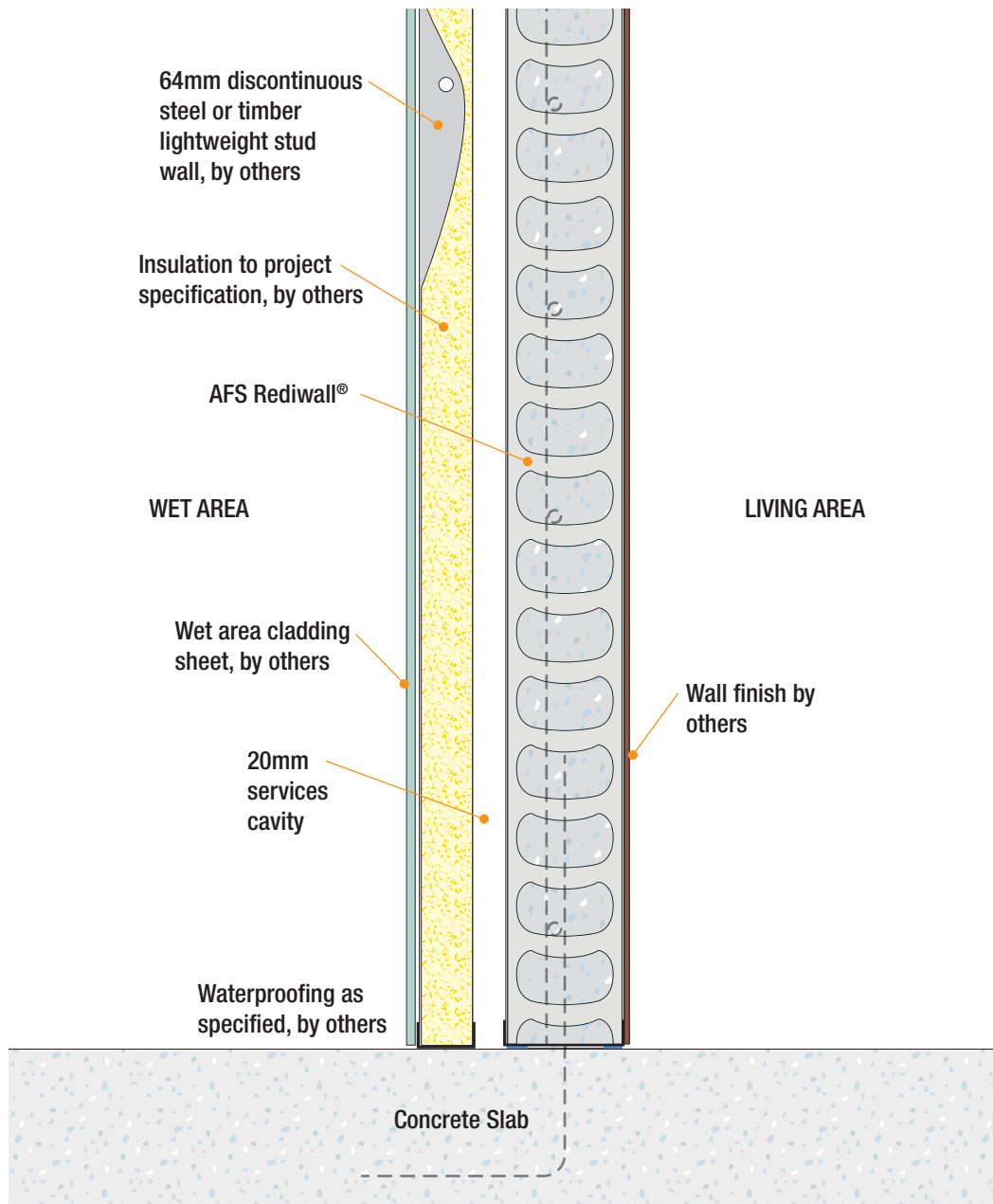


Fig 31: Rediwall® Boundary Wall Capping (Elevation View)

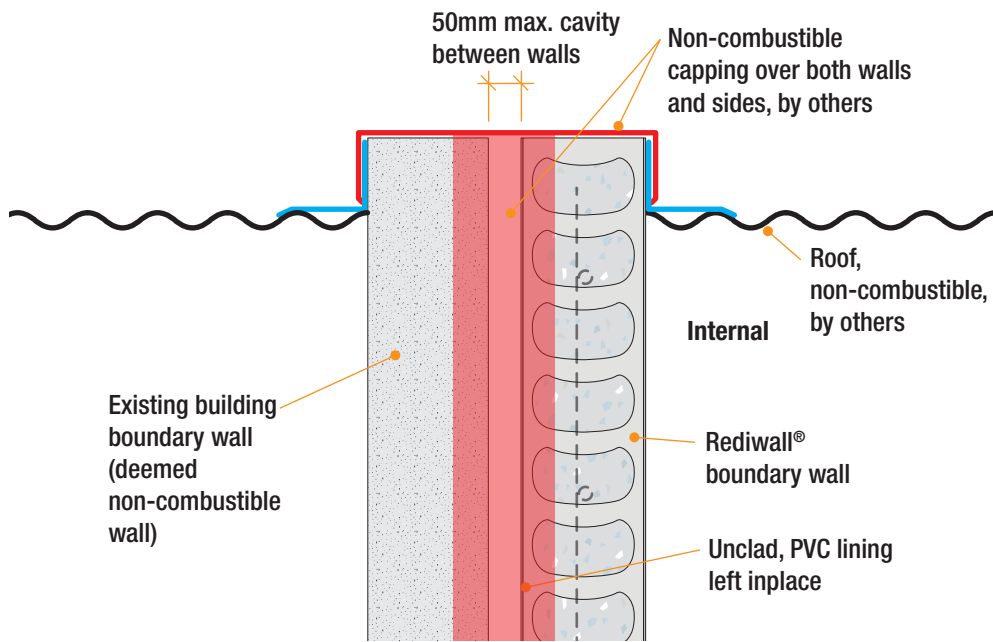
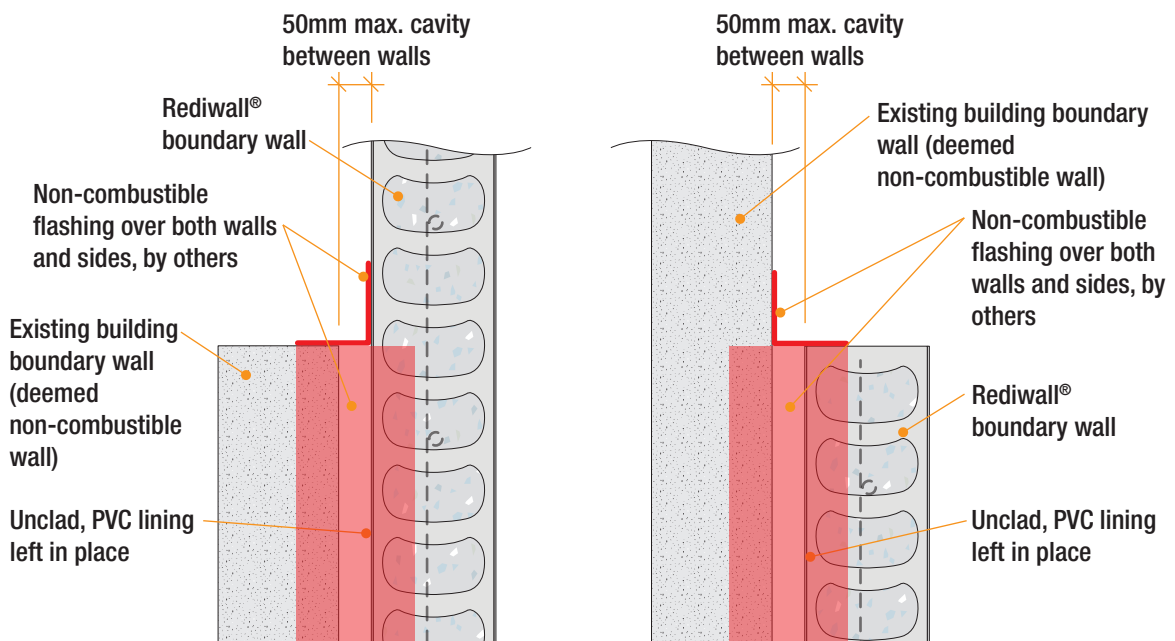


Fig 32: Rediwall® Boundary with Different Wall Heights



NOTES:

Refer to Volume 1 – Design, Performance & Compliance Guide, specific wall applications section to determine where this detail can be applied.

Rediwall® Finishing Treatments

Introduction

The use of PVC in rediwall® permanent formwork provides a durable, attractive and water resistant surface for concrete walls. AFS rediwall® can be finished in a number of treatments for internal and external wall applications that enhance the overall wall system's:

- Acoustic, fire and non-combustibility performance,
- Architectural surface, and
- Weather resistance with external walls.

For best results these should be considered in the planning stages of the project and be clearly set out in the specifications.

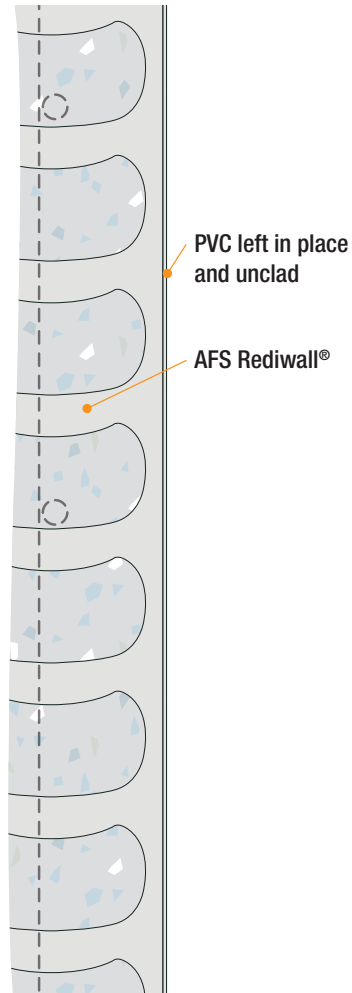
Rediwall® Non-Combustible Compliant Finishing Treatments

Rediwall® can use a variety of finishing treatments, these have been assessed by Stephen Grubits and Associates, Fire Safety Engineers for their suitability to meet non-combustibility requirements of the NCC. The various finishing treatments are shown in the following diagrams.

Reference should be made to TABLE A4 & TABLE A5 – Volume 1, to determine where the finishing treatments can be used, and any particular requirements that have been identified for each finish and application.

Fig 33: Unclad Rediwall® With PVC Lining Left In Place – Finish Type (a)

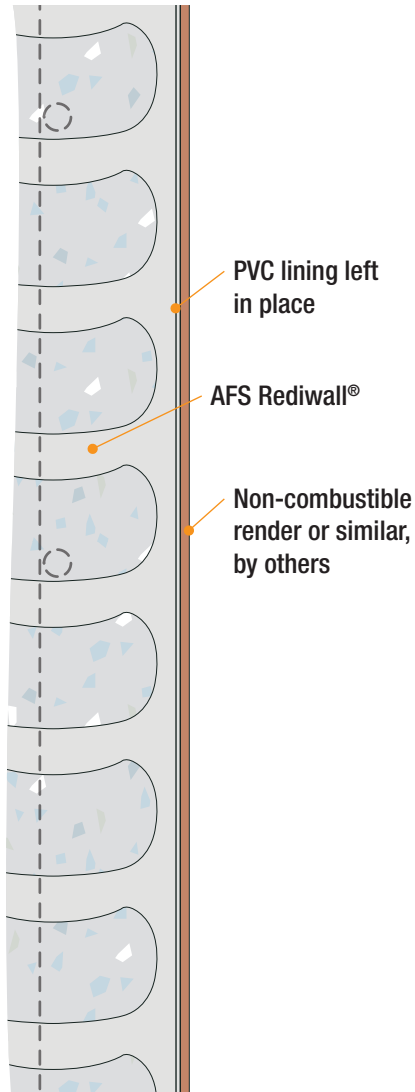
Finish Type (a)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

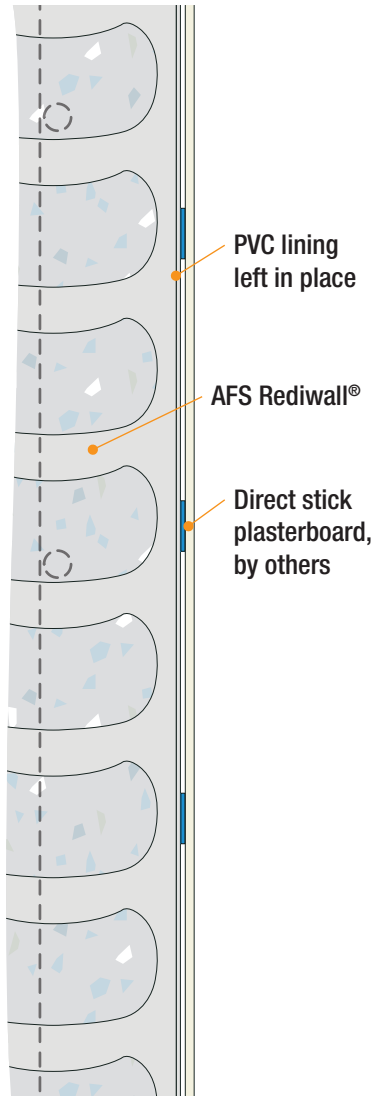
Fig 34: Non-Combustible Cement Render (or Similar Finish) Over Rediwall® PVC Lining – Finish Type (b)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

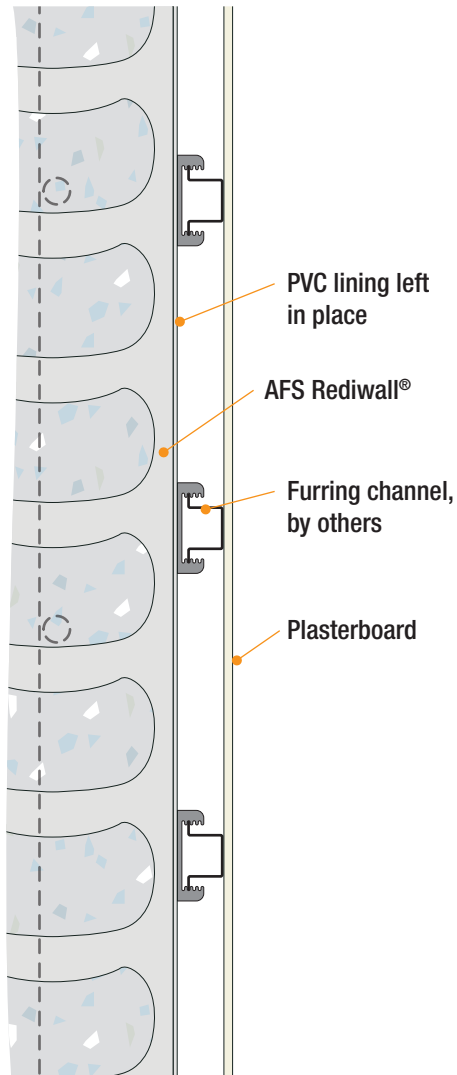
Fig 35: Plasterboard Direct Fixed To Rediwall® – Finish Type (c)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

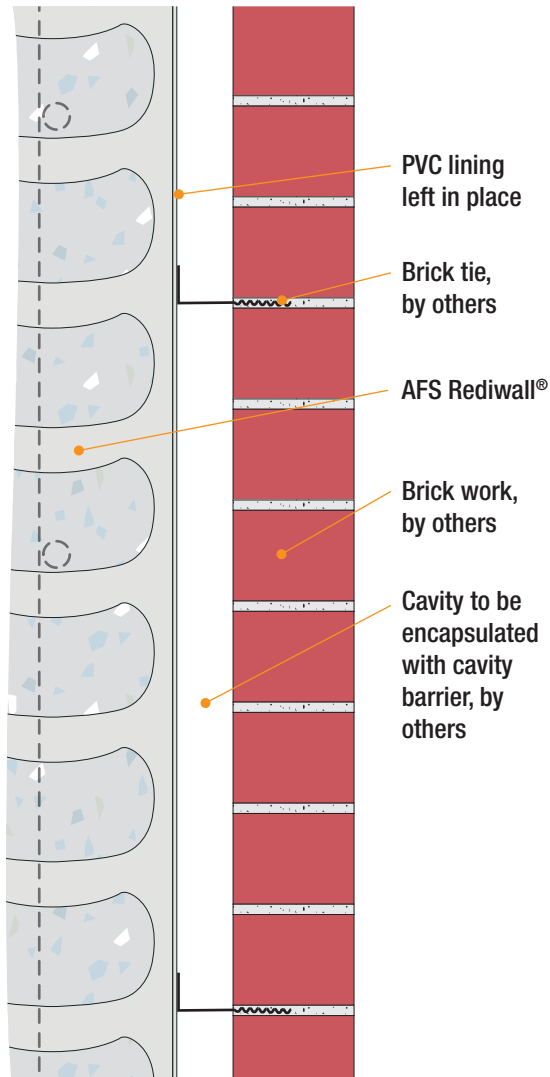
Fig 36: Plasterboard Lining and Horizontal Steel Furring Channels Fixed To Rediwall® – Finish Type (d)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

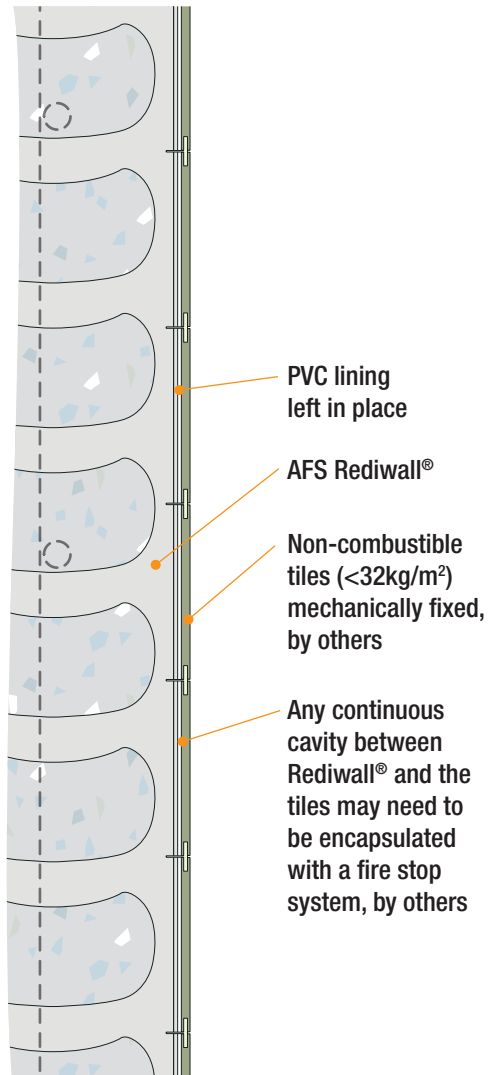
Fig 37: Rediwall® With Face Brick Exterior Skin – Finish Type (e)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

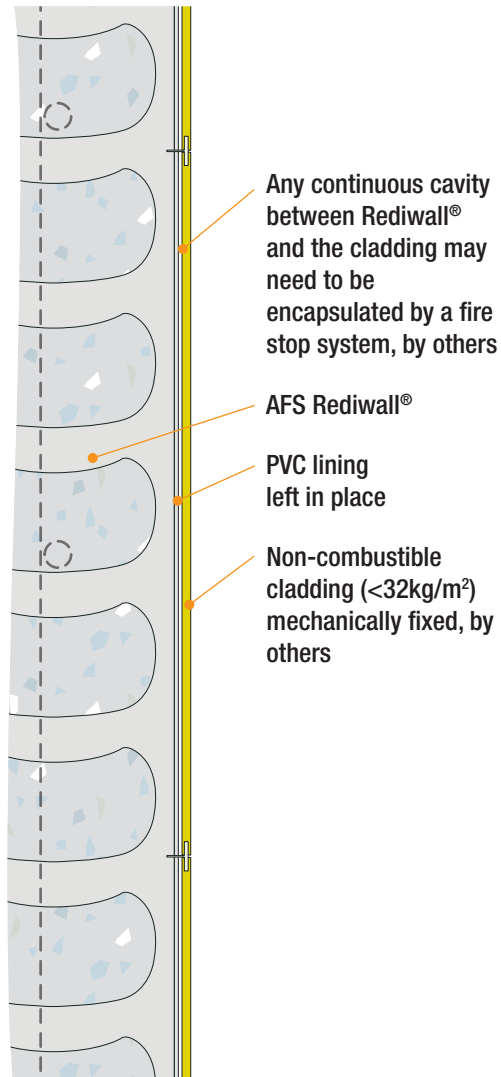
Fig 38: Tile System (<math><32\text{kg/m}^2</math>) Mechanically Fixed To Rediwall® – Finish Type (f)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

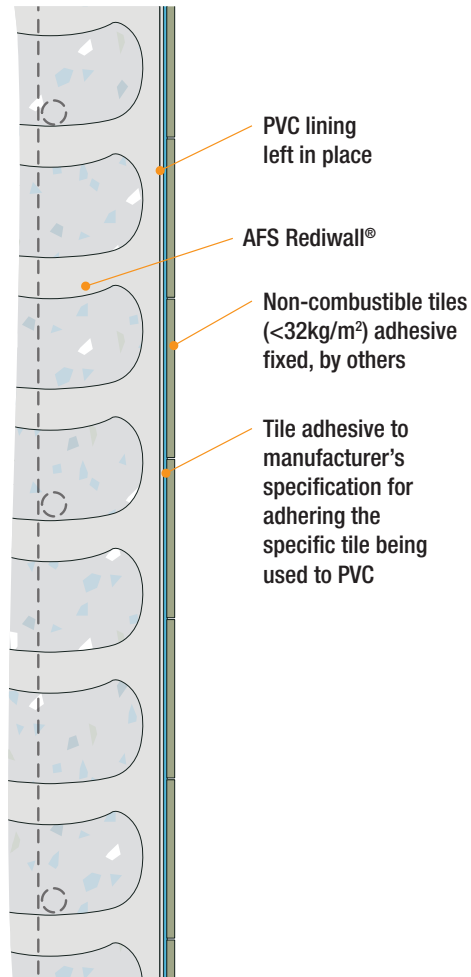
Fig 39: Mechanically Fixed Non-Combustible Cladding To Rediwall® – Finish Type (g)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

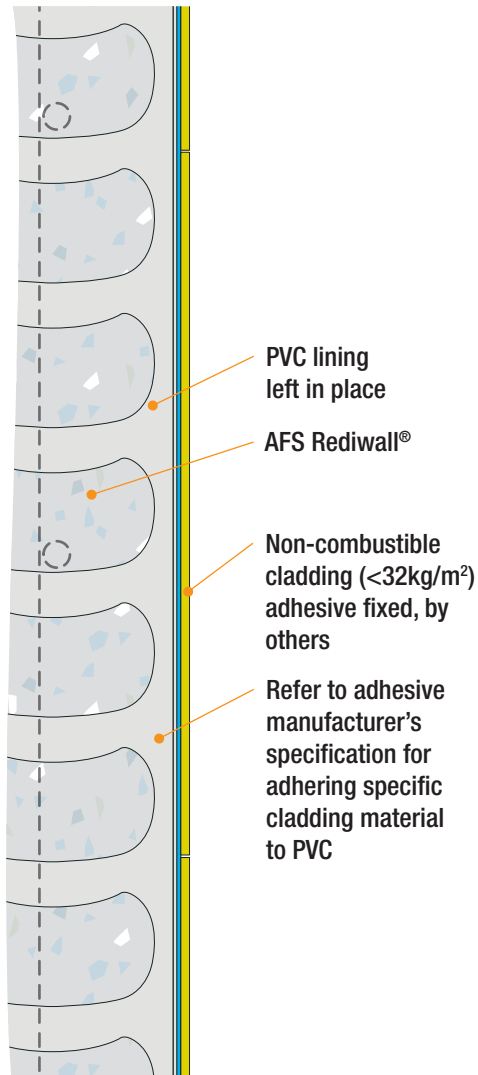
Fig 40: Tile System (<math><32\text{kg/m}^2</math>) Adhesive Fixed To Rediwall® – Finish Type (i)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

Fig 41: Adhesive Fixed Non-Combustible Cladding To Unclad Rediwall® – Finish Type (h)



NOTES:

Refer to Volume 1 – "TABLE A4 & TABLE A5: Summary of compliance with Performance Requirements & Essential Safety Precautions" to determine where this finish can be used.

PVC-based permanent formwork for basements, columns, blade & party walls, lift & stair cores, retaining walls and retention tanks



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