Fire Rated Systems Supplement

SUPPLEMENT	ISSUE DATE
GIB® Shaftwall deflection head detail	Sep 2024
Structural steel and threaded reinforcing bar penetration protection	May 2026

GIB® Shaftwall deflection head detail

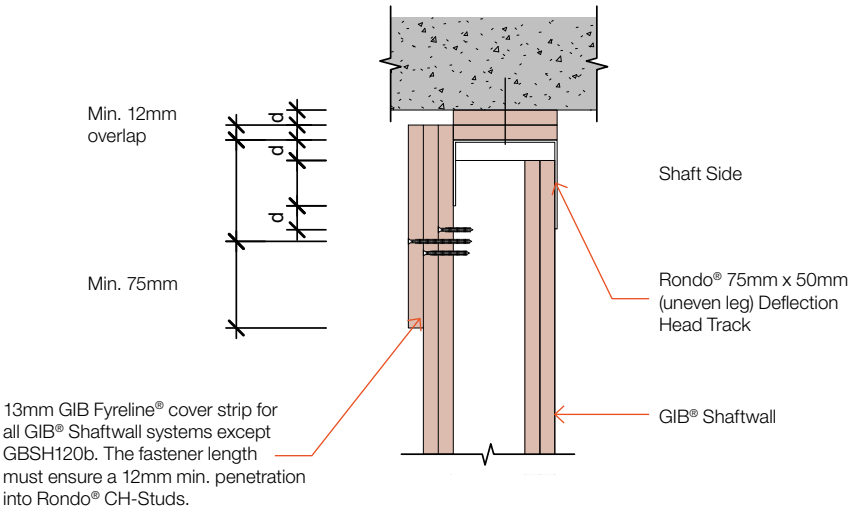
September 2024

Dead and live loads can cause significant deflection in some long-span floor systems. The GIB® Shaftwall deflection head detail is designed to avoid the transfer of floor loads onto the GIB® Shaftwall system. This specialised system is ideal for constructing vertical shafts in buildings, offering excellent fire resistance, acoustic performance, and ease of installation.

Figure 1 below shows the GIB® Shaftwall deflection head detail, which is similar to our standard deflection head detail. For all GIB® Shaftwall systems, except GBSH 120b, a 13mm GIB Fyreline® cover strip is required on the landing side.

The thickness or number of plasterboard packers at the head will depend on the floor deflections to be accommodated. The wall linings on the landing side must extend at least 12mm above the head track.

Figure 1: GIB® Shaftwall deflection head detail



GFS184

- Fix wall linings on the landing side no higher than a distance 'd' below the vertical leg of the head track
- Do not fix wall linings to the head track
- Extend wall linings on the landing side to overlap at least 12mm above the head track

Structural steel and threaded reinforcing bar penetration protection

May 2026

This bulletin supersedes pages 130 and 131 of 'GIB® Fire Rated Systems, 2024'. It provides updated guidelines for structural steel penetration protection and introduces new details for threaded reinforcing bar penetration protection.

Structural steel members penetrating a fire rated wall system must be treated in the same manner as any other service penetration and appropriately sealed to maintain the fire resistance rating of the wall system.

In response to customer feedback, Winstone Wallboards has recently completed additional testing on structural steel penetrations without clad-backs, hollow structural steel penetrations, and threaded reinforcing bar penetrations.

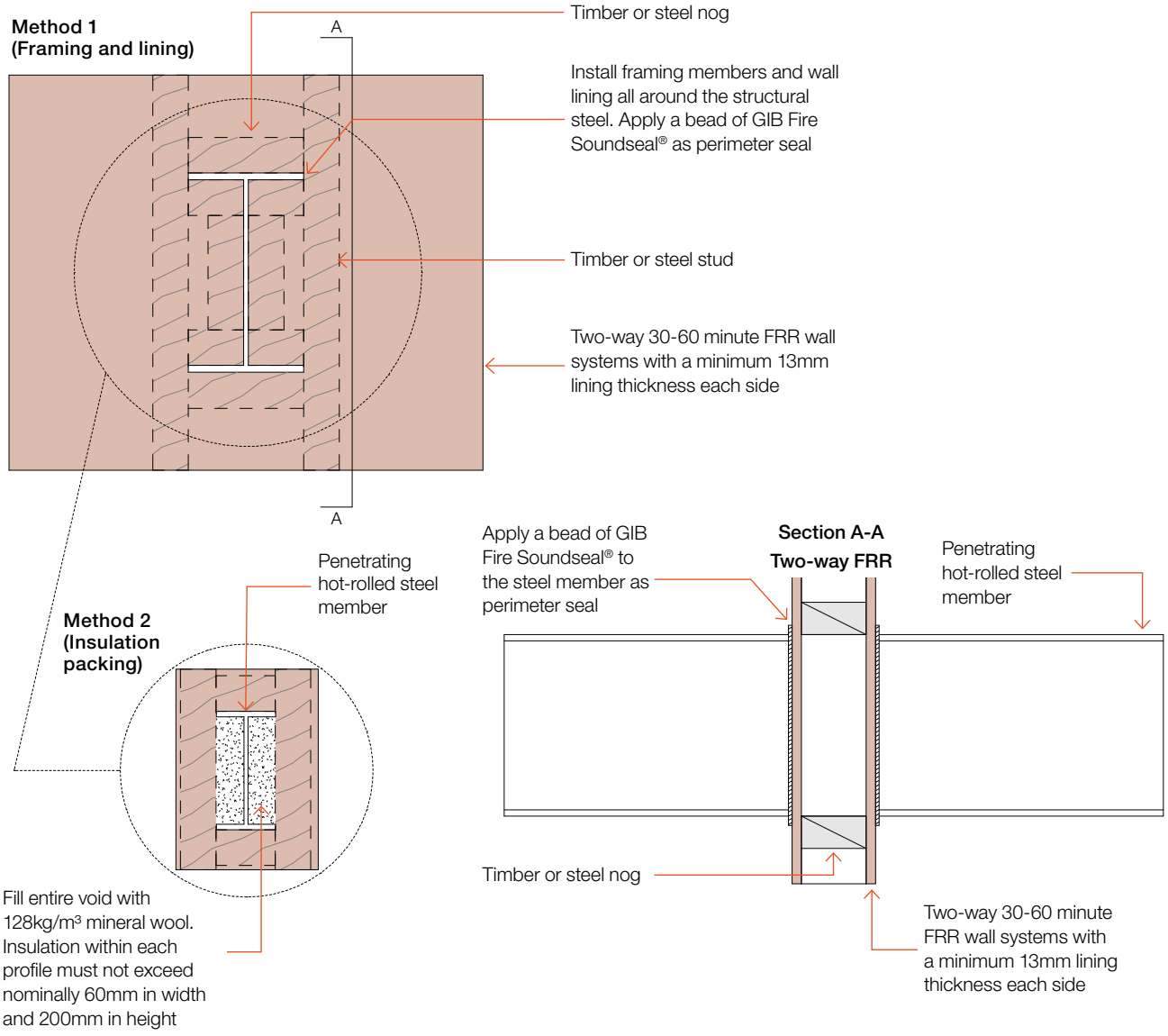
The following details have been updated or newly introduced. Each detail includes specific installation requirements, dimensional limitations, and applicable fire resistance ratings, all of which must be satisfied.

- **GFS505** - Hot-rolled steel penetration without clad-backs
- **GFS502** - Hot-rolled steel penetration with clad-backs
- **GFS506** - Cold-formed steel penetration without clad-backs
- **GFS503** - Cold-formed steel penetration with clad-backs
- **GFS507** - Hot-rolled hollow steel
- **GFS508** - Threaded reinforcing bar penetration - Option 1
- **GFS509** - Threaded reinforcing bar penetration - Option 2

The penetration design must ensure that the steel member does not transfer fire-induced loads onto the wall system.

For any further information, please contact the **GIB® Helpline 0800 100 442**.

HOT-ROLLED STRUCTURAL STEEL PENETRATING TIMBER/STEEL FRAME WALL SYSTEMS WITHOUT CLAD-BACKS



Construction	Steel Thickness	Possible method	FRR
Two-way 30-minute FRR wall system	Equal to or less than 10mm	Method 2 only	-/30/30
	Equal to or less than 20mm	Method 1 or 2	-/30/-
Two-way 60-minute FRR wall system	Equal to or less than 10mm	Method 2 only	-/60/30
	Equal to or less than 20mm	Method 1 or 2	-/60/-

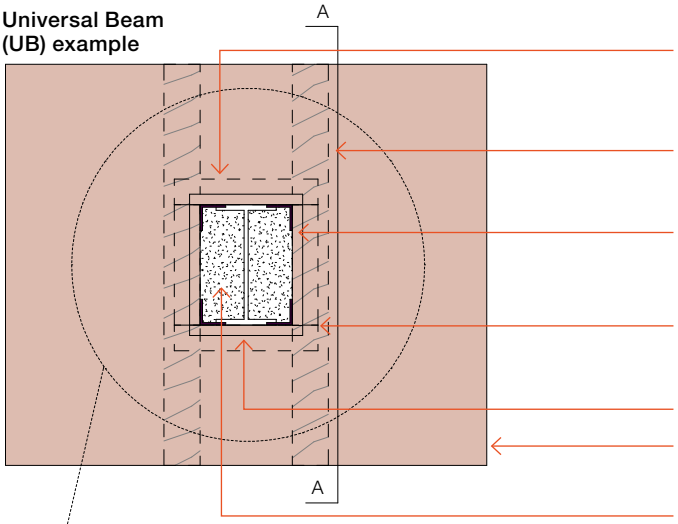
NOTE:

- Full insulation rating can be achieved with 300mm long plasterboard clad-backs around the penetrating steel member. Refer to GFS502 for installation instructions.
- Refer to GFS507 for the hollow section penetration detail.

GFS505

HOT-ROLLED STRUCTURAL STEEL PENETRATING TIMBER/STEEL FRAME WALL SYSTEMS WITH CLAD-BACKS

Universal Beam (UB) example



GIBFix® angle to form corner sheet joint between 300mm plasterboard clad-backs and wall lining

Timber or steel stud

Leave a 15-20mm gap between vertical leg of GIBFix® angle and edge of steel member flange to accept top and bottom clad-backs screws

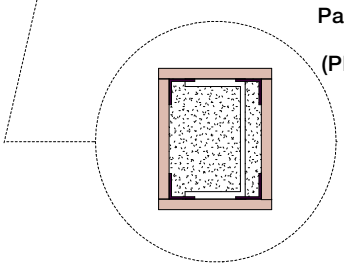
300mm long plasterboard clad-backs (same type and overall thickness as the wall lining)

Penetrating hot-rolled steel member

Two-way 30-120 minute FRR wall systems

Fill entire void with 80kg/m³ mineral wool insulation extending 300mm from the wall faces both sides

Parallel Flange Channel (PFC) example



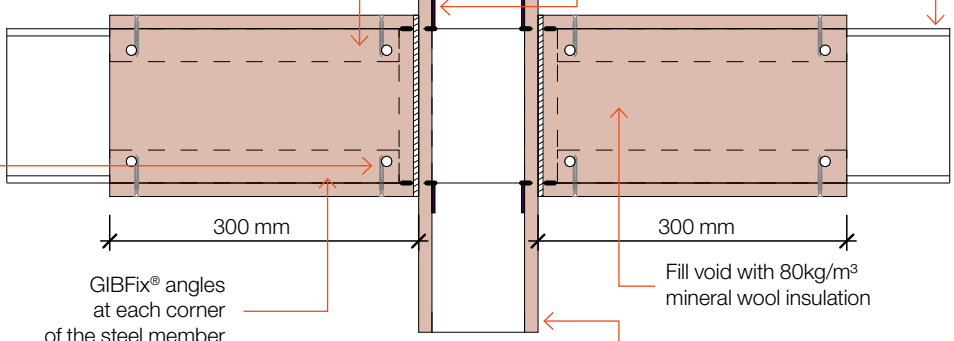
GIBFix® angle to form corner sheet joint between 300mm plasterboard clad-backs and wall linings

Section A-A Two-way FRR

300mm long plasterboard clad-backs (same type and overall thickness as the wall lining) bedded onto the bead of GIB Fire Soundseal® and fixed to GIBFix® angles

GIB® Grabber® Self Tapping Drywall Screws at 300mm centres max. The fastener length must ensure a nominal 12mm penetration into GIBFix® angle

Penetrating hot-rolled steel member



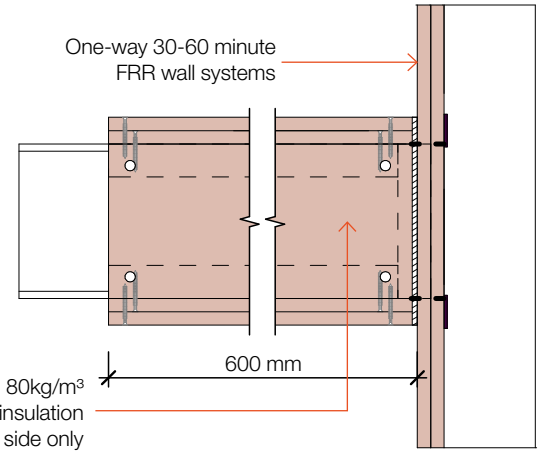
GIBFix® angles at each corner of the steel member

Fill void with 80kg/m³ mineral wool insulation

Two-way 30-120 minute FRR wall systems

Section A-A One-way FRR

One-way 30-60 minute FRR wall systems



Fill void with 80kg/m³ mineral wool insulation on one side only

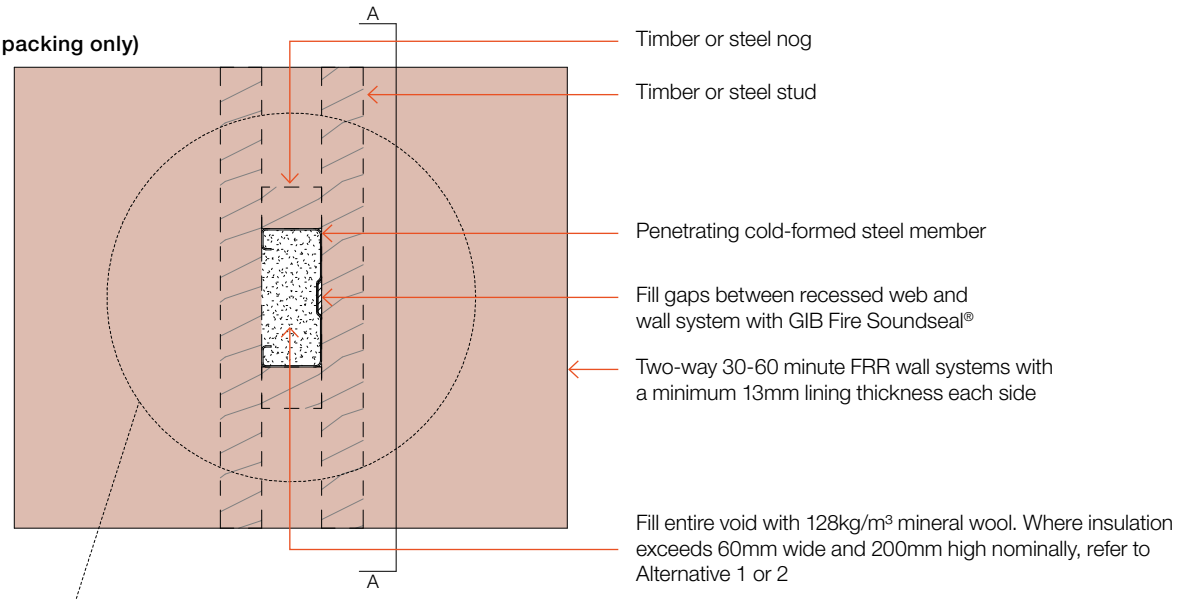
NOTE:

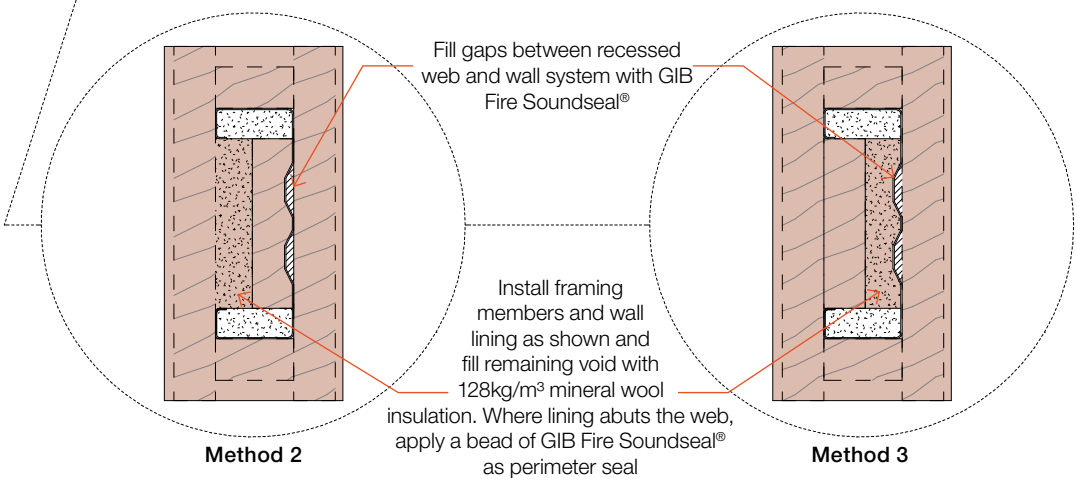
- Refer to GFS507 for the hollow section penetration detail
- 64 x 34 x 0.5mm or larger steel member penetrations only
- Maximum steel thickness shall not exceed 20mm for an FRR up to and including 60 minutes, and 10mm for FRRs of 90 and 120 minutes

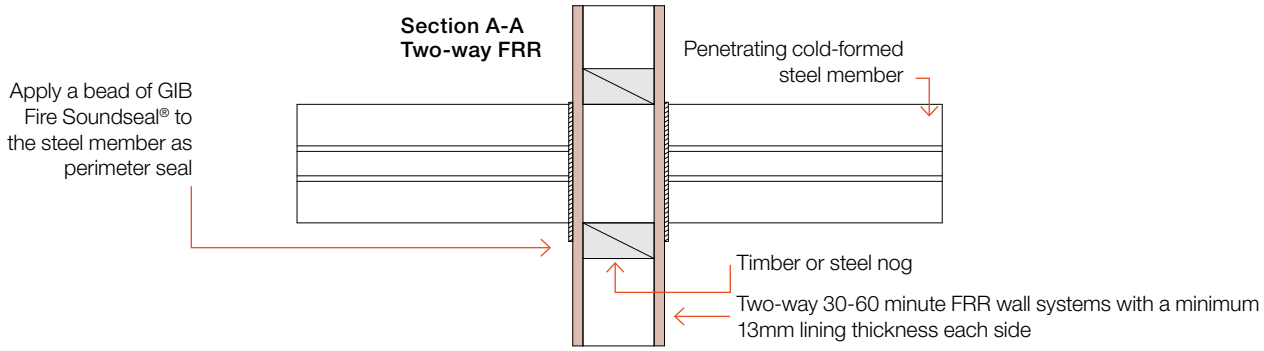
GFS502

COLD-FORMED STRUCTURAL STEEL PENETRATING TIMBER/STEEL FRAME WALL SYSTEMS WITHOUT CLAD-BACKS

Method 1
(Insulation packing only)







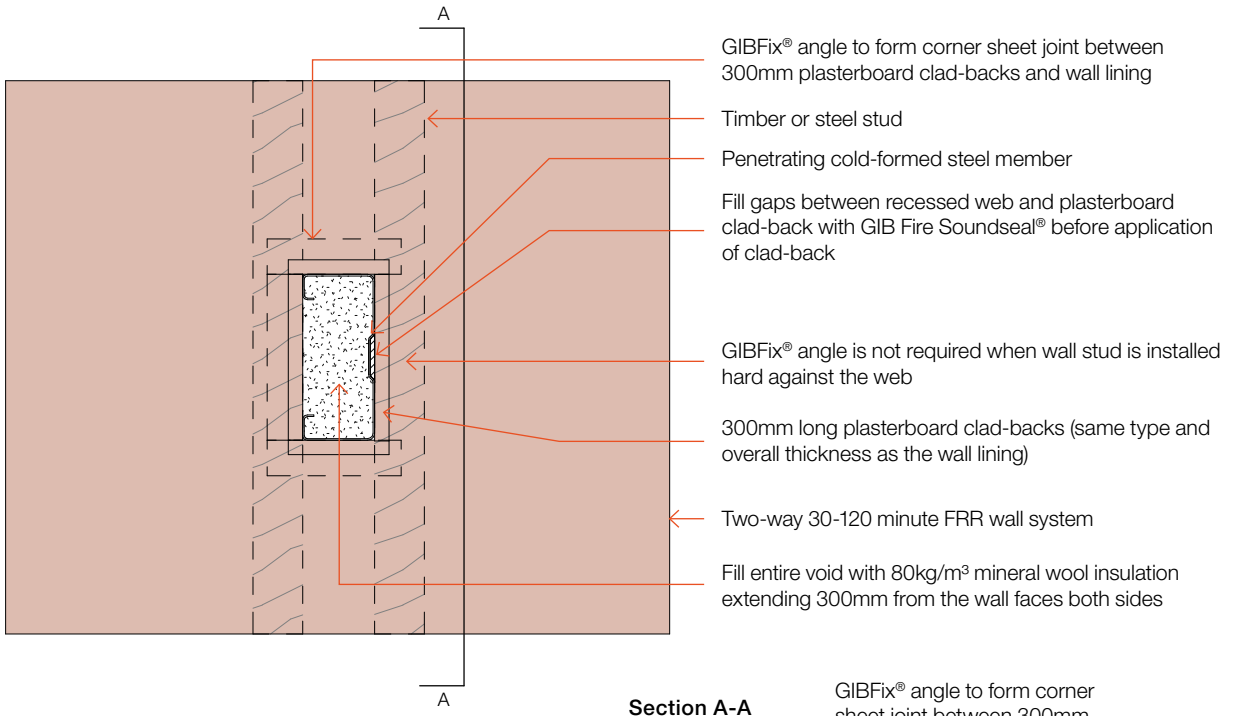
Construction	Size	Possible method	FRR
Two-way 30-minute FRR wall system	Up to 150mm in height with 1.5mm wall thickness	Method 1	-/30/30
	Up to 200mm in height	Method 1	-/30/-
	Up to 400mm in height	Method 2 or 3	
Two-way 60-minute FRR wall system	Up to 150mm in height with 1.5mm wall thickness	Method 1	-/60/60
	Up to 200mm in height	Method 1	-/60/-
	Up to 400mm in height	Method 2 or 3	

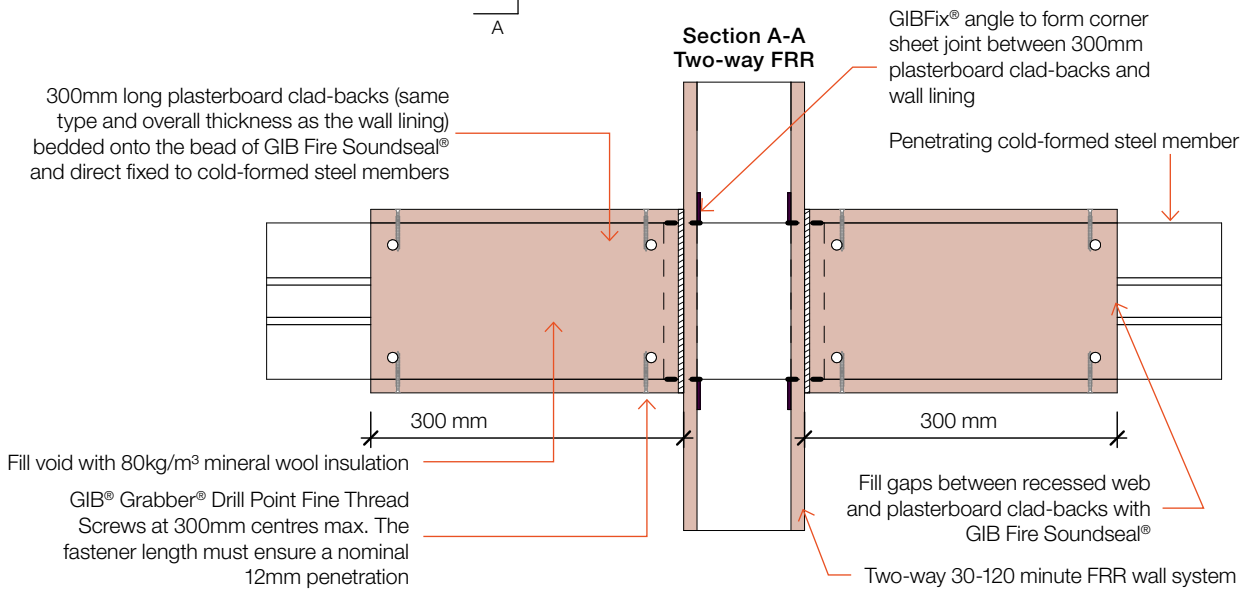
NOTE:

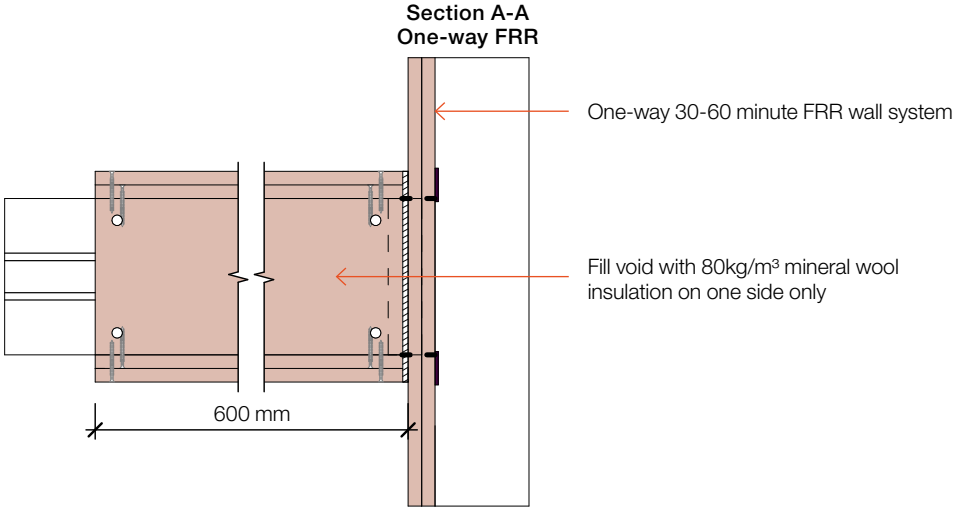
- Full insulation rating can be achieved with 300mm long plasterboard clad-backs around the penetrating steel member. Refer to GFS503 for installation instructions.

GFS506

COLD-FORMED STRUCTURAL STEEL PENETRATING TIMBER/STEEL FRAME WALL SYSTEMS WITH CLAD-BACKS





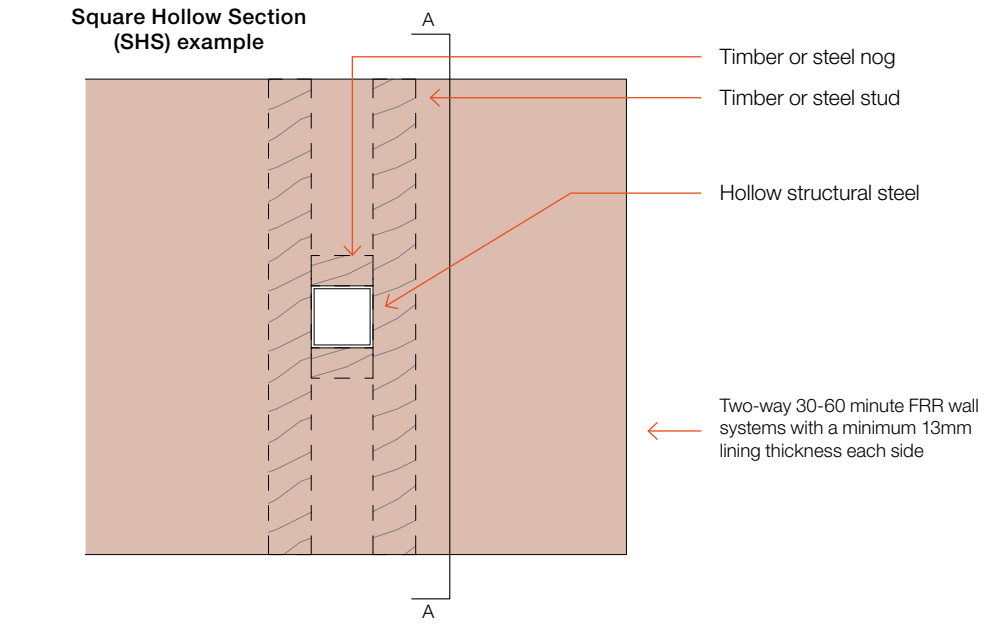


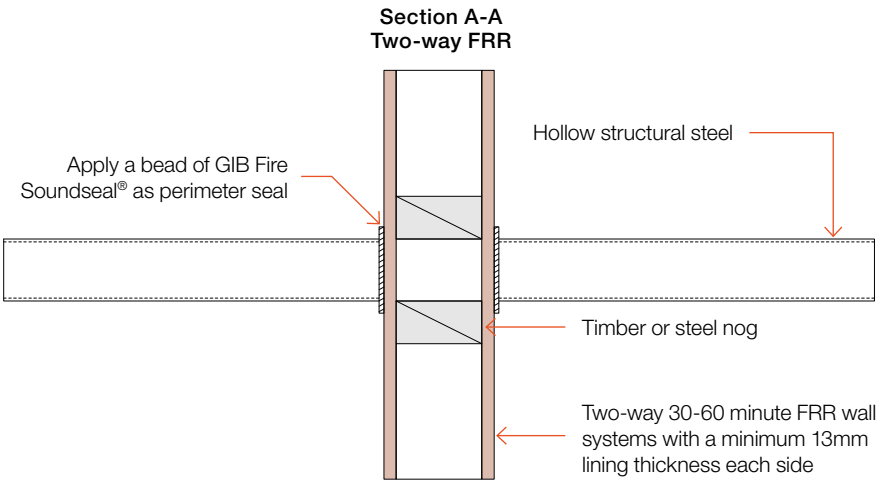
NOTE:

- 64 x 34 x 0.5mm or larger steel member penetrations only
- Maximum steel thickness shall not exceed 20mm for an FRR up to and including 60 minutes, and 10mm for FRRs of 90 and 120 minutes.

GFS503

HOT-ROLLED HOLLOW STRUCTURAL STEEL PENETRATING 30 – 60-MINUTE FRR TIMBER/STEEL FRAME WALL SYSTEMS

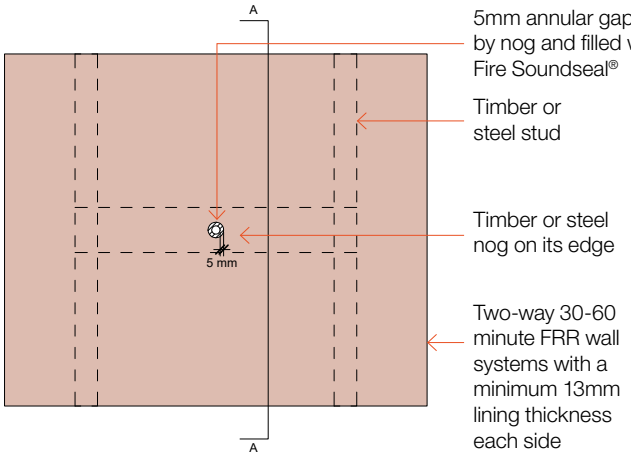


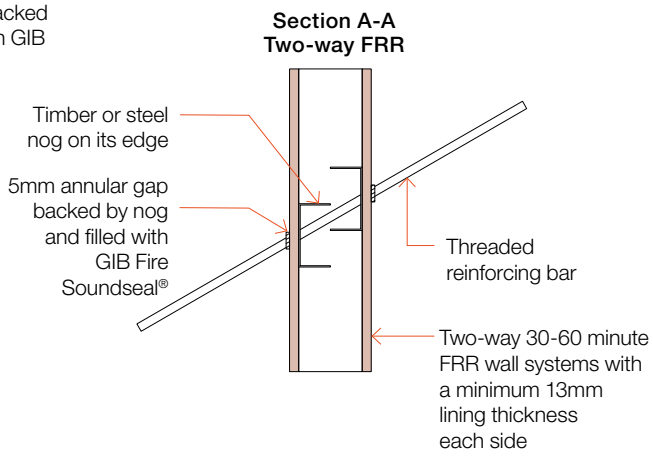


Construction	Size	FRR
Two-way 30-minute FRR wall system	50 x 50 x 2.5mm	-/30/30
	Other sizes up to 200 x 200mm with a minimum 2.5mm wall thickness	-/30/-
Two-way 60-minute FRR wall system	50 x 50 x 2.5mm	-/60/30
	Other sizes up to 200 x 200mm with a minimum 2.5mm wall thickness	-/60/-

GFS507

THREADED REINFORCING BAR PENETRATING 30 – 60-MINUTE FRR TIMBER/STEEL FRAME WALL SYSTEMS – OPTION 1

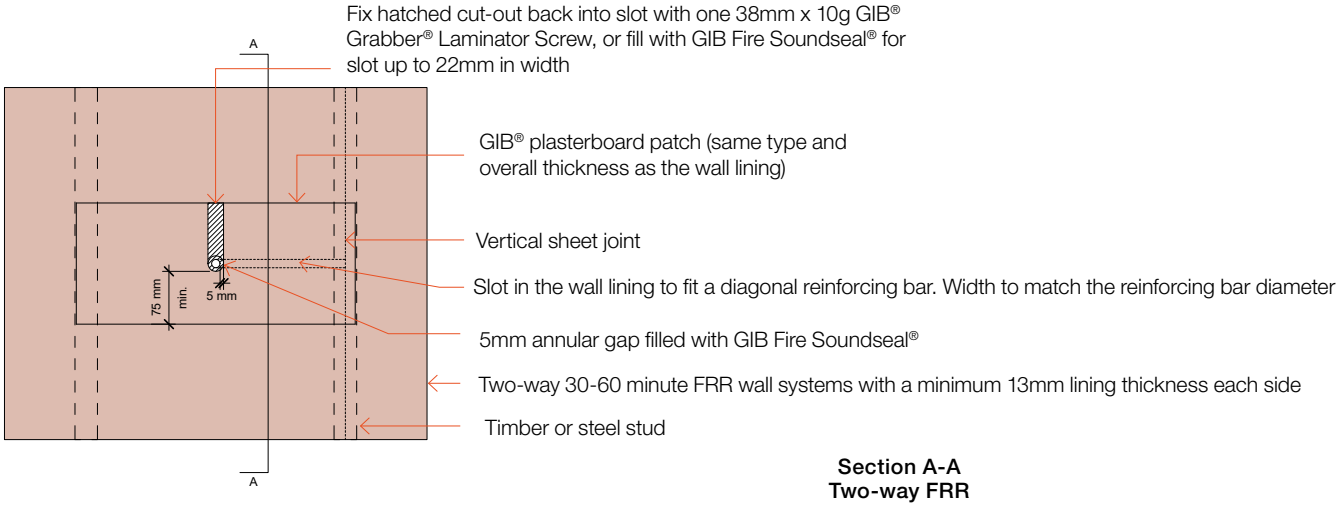


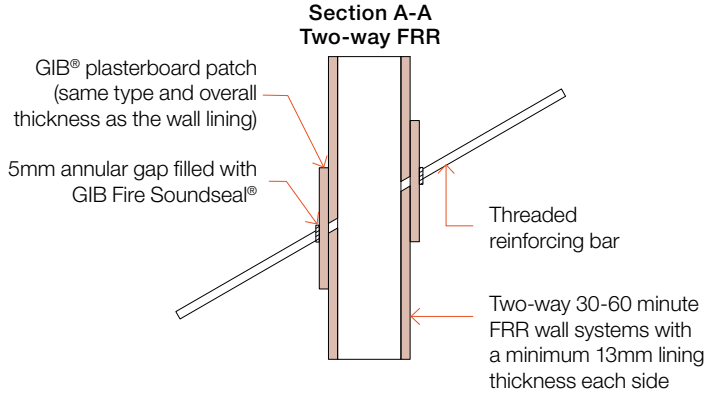


Construction	Diameter	FRR
Two-way 30-minute FRR wall system	12mm	-/30/30
	16 - 32mm	-/30/-
Two-way 60-minute FRR wall system	12mm	-/60/60
	16 - 32mm	-/60/-

GFS508

THREADED REINFORCING BAR PENETRATING 30 – 60-MINUTE FRR TIMBER/STEEL FRAME WALL SYSTEMS – OPTION 2





Construction	Diameter	FRR
Two-way 30-minute FRR wall system	12mm	-/30/30
	16 - 32mm	-/30/-
Two-way 60-minute FRR wall system	12mm	-/60/60
	16 - 32mm	-/60/-

GFS509