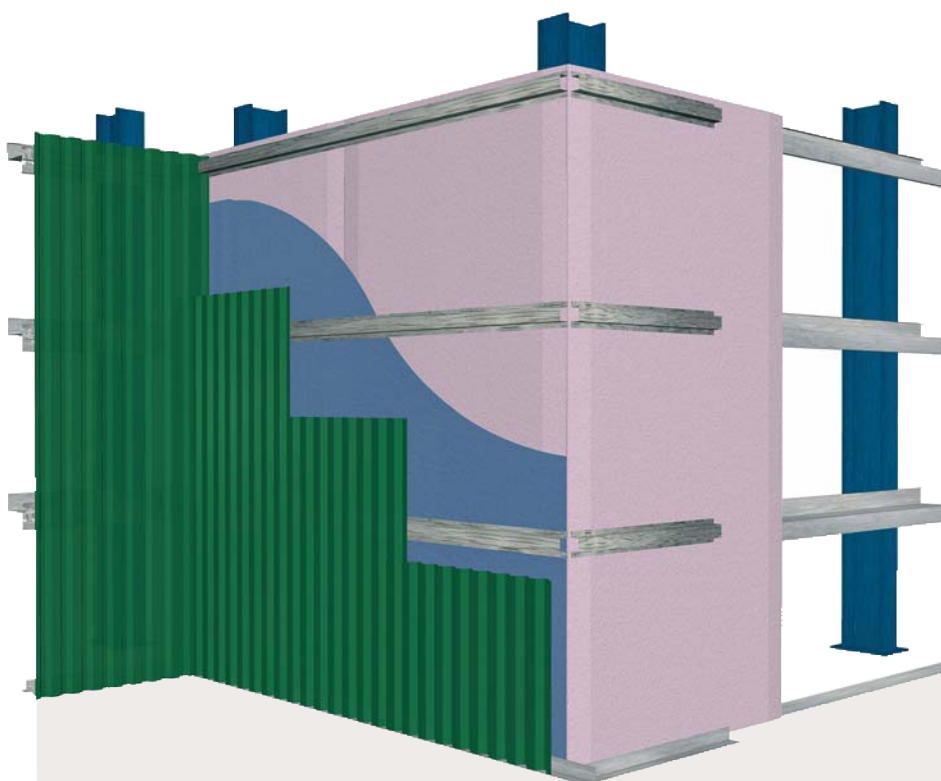


EXTERNAL STRUCTURAL WALLS

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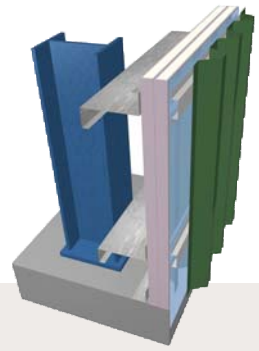
Steel framed external structural walls are used in buildings such as car parks, factories and workshops. If these walls are built close to property boundaries, they often require fire protection from the outside.

Systems in this section provide fire protection from the outside for up to 120 minutes. **MultiShield** forms part of the wall, which is covered by a moisture barrier and external cladding to provide protection from the weather.

LSSEW1

EXTERNAL WALL CLADDING:
EXTERNAL CLADDING FRAME:
MOISTURE BARRIER:
EXTERNAL WALL LINING:
FRAME:

Suitable external cladding
Galvanised battens fixed to Z or C girts
Breathable wall wrap
2 layers of 16mm **MultiShield**
Z or C girts attached to structural frame

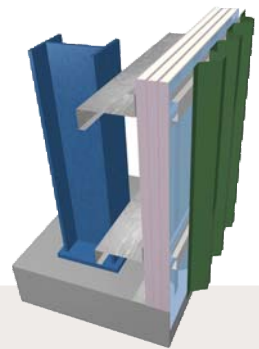


FRL	MAXIMUM GIRT SPACING (mm)	PLASTERBOARD THICKNESS (mm)	ACOUSTICS Rw (Rw + Ctr)	
60/60/60 rated from the outside only FAR 1612	600	32	35 (31)	Day Design 3094-33

LSSEW2

EXTERNAL WALL CLADDING:
EXTERNAL CLADDING FRAME:
MOISTURE BARRIER:
EXTERNAL WALL LINING:
FRAME:

Suitable external cladding
Galvanised battens fixed to Z or C girts
Breathable wall wrap
3 layers of 13mm **MultiShield**
Z or C girts attached to structural frame

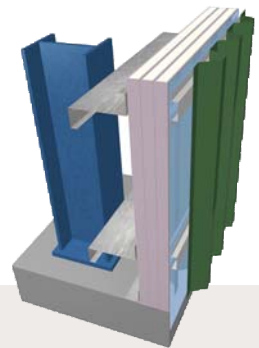


FRL	MAXIMUM GIRT SPACING (mm)	PLASTERBOARD THICKNESS (mm)	ACOUSTICS Rw (Rw + Ctr)	
90/90/90 rated from the outside only FAR 1612	900	39	37 (34)	Day Design 3094-33

LSSEW3


EXTERNAL WALL CLADDING:
EXTERNAL CLADDING FRAME:
MOISTURE BARRIER:
EXTERNAL WALL LINING:
FRAME:

Suitable external cladding
Galvanised battens fixed to Z or C girts
Breathable wall wrap
3 layers of 16mm **MultiShield**
Z or C girts attached to structural frame




FRL	MAXIMUM GIRT SPACING (mm)	PLASTERBOARD THICKNESS (mm)	ACOUSTICS Rw (Rw + Ctr)	
120/120/120 rated from the outside only FAR 2203	1200	48	38 (35)	Day Design 3094-33

GENERAL REQUIREMENTS

	FIRE RATED 
Install control joints in plasterboard walls: <ul style="list-style-type: none"> › At 12m maximum intervals › At all control joints in the structure › At any change in the substrate material 	✓
Jointing of MultiShield is not required due to the overlying breathable wall wrap and external cladding.	✓
Use approved fire rated penetration details. Fire penetrations may require fire collars or other devices to maintain fire performance.	✓
Pack any gaps between the top of the wall and the underside of the roof covering with mineral fibre or other suitable fire resisting material. This maintains the fire rating of the system. [REFER TO MINERAL FIBRE MANUFACTURERS SPECIFICATIONS FOR MINIMUM WIDTHS REQUIRED].	✓
Protect plasterboard from water pooling at ground level.	✓
Use fire sealant on all gaps and around perimeter, vermiculite plaster is not permitted.	✓


i For acceptable modifications or variations to fire rated systems [REFER TO SECTION 3.3 FIRE RESISTANCE].

FRAMING

	FIRE RATED 
Fix 50 x 50 x 0.7mm BMT galvanised steel angle to: <ul style="list-style-type: none"> › Concrete at the base to act as skirting › Girts at all corners › Control joints. 	✓
Install an anti-splash board at the base of the external wall to protect the plasterboard from water damage [REFER TO CONSTRUCTION DETAILS FIGURES 3 - 5].	✓
Use girt support rods or equivalent where required to avoid sagging of girts under the weight of plasterboard.	✓

i Plumbing and electrical services must not protrude beyond the face of the stud. Gas services are not permitted in fire rated systems.


PLASTERBOARD LAYOUT

	FIRE RATED 
Install plasterboard sheets vertically and perpendicular to girts.	✓
Stagger butt joints by 600mm minimum on adjoining sheets and between layers.	✓
First layer butt joints must be backed by a girt.	✓
Stagger recessed edges by 300mm minimum between layers.	✓



If a jointed finish on the interior of the wall is desired, face the first layer inwards.

PLASTERBOARD FIXING


	FIRE RATED 
Use the Screw Only Method. Stud adhesive is not permitted.	✓
Drive screws to just below the sheet surface, taking care not to break the paper linerboard.	✓
Do not fix plasterboard to steel more than 2mm BMT.	✓
Laminating screws can be used to fix butt joints in the second and third layer.	✓

SCREW TYPE AND MINIMUM SIZE FOR THE INSTALLATION OF PLASTERBOARD TO STEEL

PLASTERBOARD THICKNESS	1ST LAYER	2ND LAYER	3RD LAYER
13mm	25mm – 6g S screw	40mm – 6g S screw *	60mm – 6g S screw *
16mm	30mm – 6g S screw	45mm – 6g S screw *	65mm – 6g S screw *

For steel up to 0.8mm BMT use Type 'S' fine thread needle point screws.
 For steel 0.8mm to 2.0mm BMT use Type 'S' fine thread drill point screws.
 * 40mm - 10g Laminating screws may be used as detailed in installation diagrams.

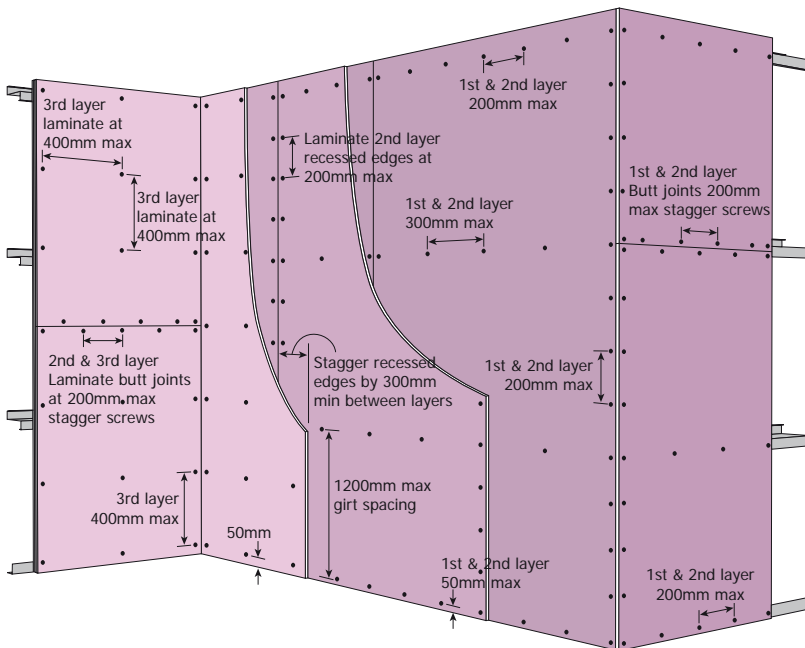
EXTERIOR CLADDING

	FIRE RATED 
External cladding must be non-combustible or not contribute to the fire intensity.	✓
Fix cladding battens through plasterboard to girts.	✓
Protect plasterboard from water pooling at ground level.	✓
Extend the external fire rated wall up to the non-combustible roof covering or non-combustible eaves lining [REFER TO CONSTRUCTION DETAILS].	✓

i Exterior cladding and moisture barrier must provide protection from the weather. Use construction techniques that direct condensation and rain away from plasterboard.

FIGURE 1

 **Fire rated 3 layers - All Vertical**
Screw Only Method



Fixing	SCREW ONLY METHOD
Sheet Layout	1st, 2nd and 3rd layers: Vertical
Perimeter	1st and 2nd layer: Perimeter screws 10-15mm from sheet edges. 3rd layer: Perimeter screws 50mm max from sheet edges.
Field	1st layer: Fix at 300mm max centres. 2nd layer: Fix at 300mm max centres. 3rd layer: Laminate to 2nd layer at 400x400mm max centres.
Recessed Edges	1st layer: Fix to each girt. 2nd layer: Fix to each girt. Stagger recessed edges by 300mm min between layers. 3rd layer: Laminate to 2nd layer at 400mm max centres.
Butt Joints	1st layer: Fix at 200mm max centres and stagger screws. Stagger butt joints by 600mm min on adjoining sheets and between layers of the wall. 1st layer butt joint must be backed by a girt. 2nd layer: Fix at 200mm max centres and stagger screws. Alternatively, laminate to 1st layer using laminating screws at 200mm max centres and stagger screws. 3rd layer: Laminate to 2nd layer using laminating screws at 200mm max centres and stagger screws.
Internal and External Corners	1st layer: Fix at 200mm max centres. 2nd layer: Fix at 200mm max centres. 3rd layer: Fix at 400mm max centres.
Openings	1st layer: Fix at 200mm max centres. 2nd layer: Fix at 200mm max centres. 3rd layer: Fix at 400mm max centres.
Fire Sealant	Use fire sealant on all gaps and around perimeter to maintain fire and acoustic integrity. [REFER TO CONSTRUCTION DETAILS]
Joining Face Layer	Joining of the face layer is not required if a moisture barrier is used over the plasterboard.



FIRE RATED

EXTERNAL STRUCTURAL WALL - ELEVATION

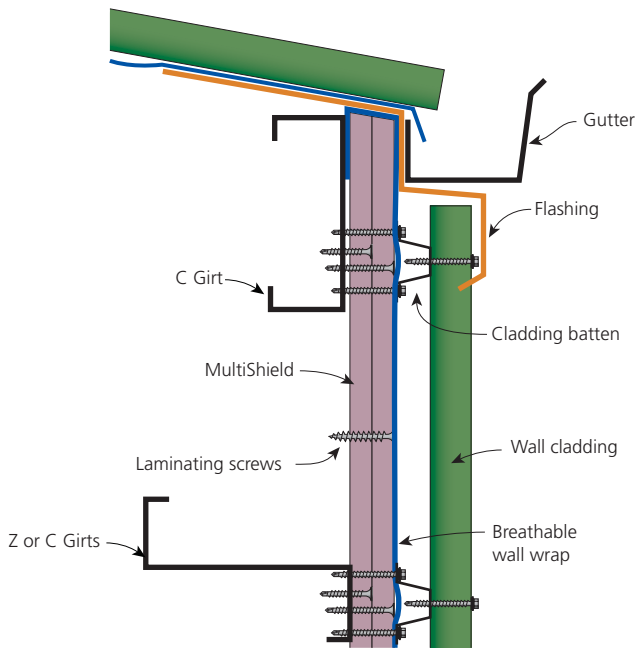


FIGURE 2
Wall head to roof

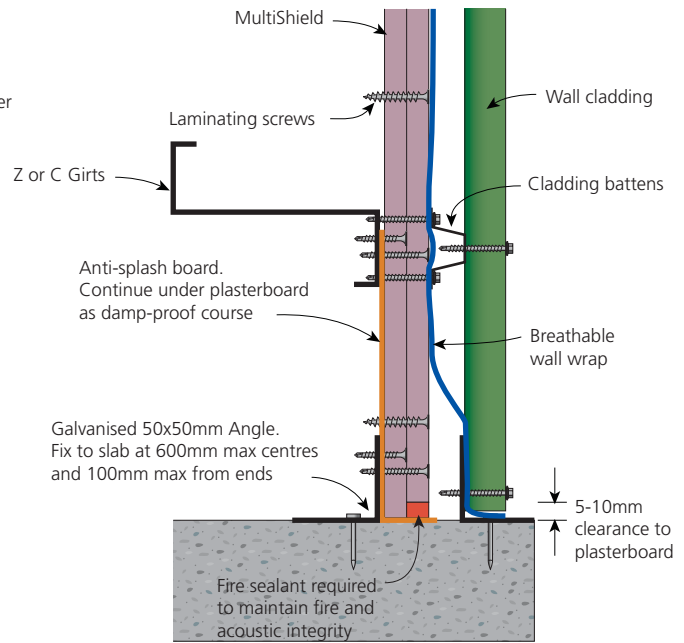


FIGURE 3
Wall base to slab

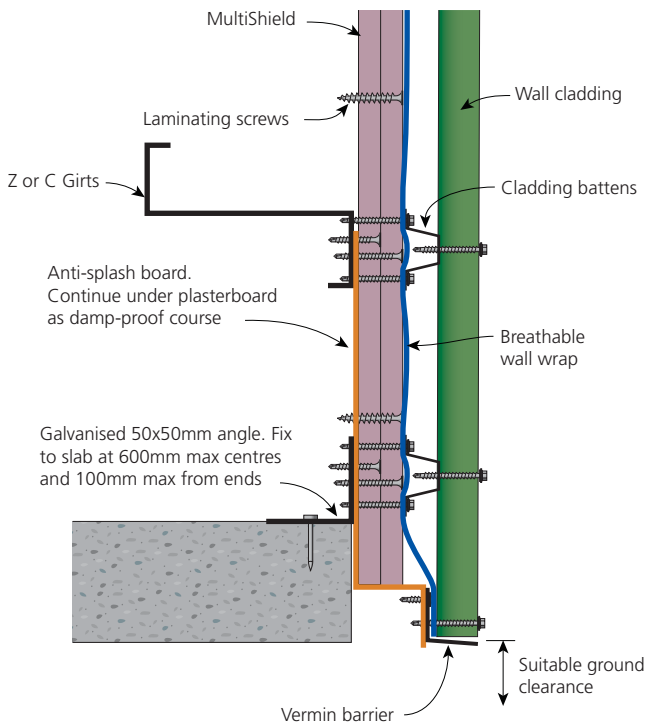


FIGURE 4
Wall base around slab

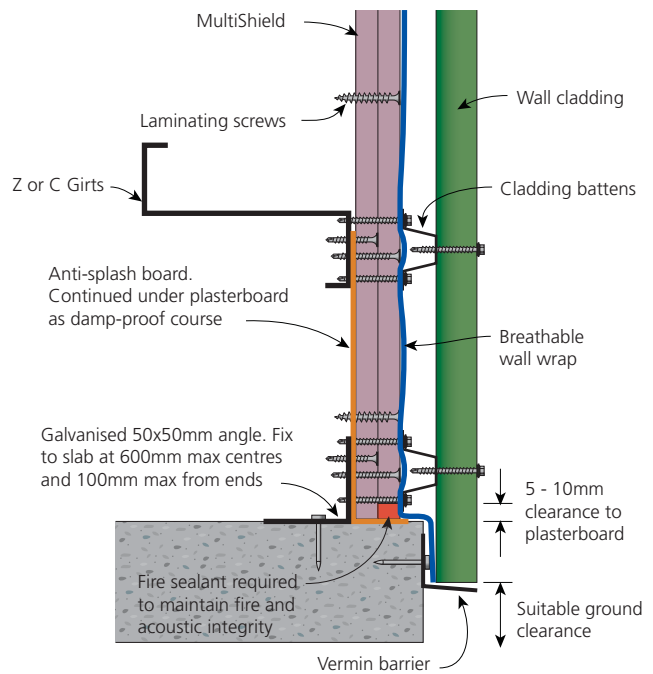


FIGURE 5
Wall base on edge of slab

FIRE RATED
EXTERNAL STRUCTURAL WALL

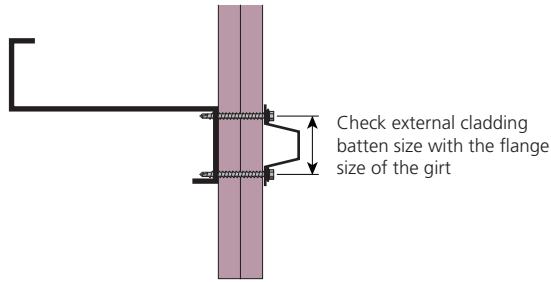


FIGURE 6
External cladding size detail
Elevation

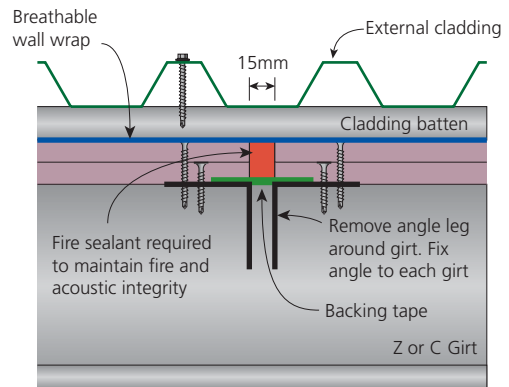


FIGURE 7
Control joint detail
Plan view

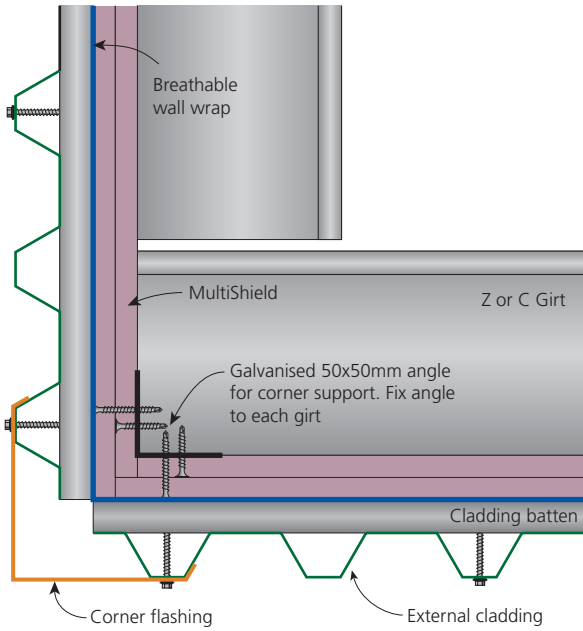


FIGURE 8
Typical external corner detail
Plan view

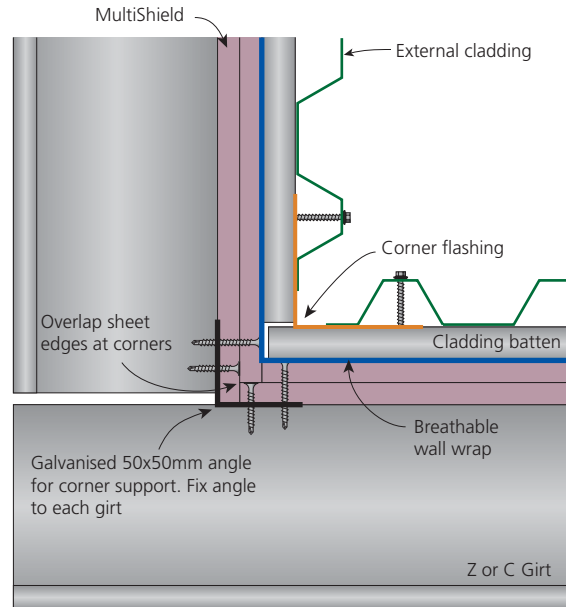


FIGURE 9
Typical internal corner detail
Plan view