



SYSTEMS **317**

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Horizontal Shaft Wall

Horizontal Shaft Wall is constructed in a similar way to a standard Shaft Wall and uses the same components. It is constructed using steel CH-studs as the ceiling joists.

Horizontal Shaft Wall systems are ideal for constructing a ceiling when access is only possible from below and a fire rating is required from above.

KSHWC1

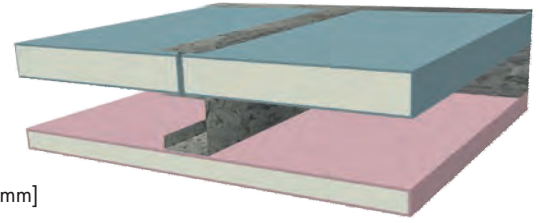
FRAME: 1 layer of 25mm **ShaftLiner** encased in CH-studs at either 300mm or 600mm spacing

CEILING LINING: 1 layer of 16mm **FireShield**

[Span based on Serviceability UDL 0.35 kPa and maximum deflection span/360 or 10mm]

[Ceiling joists are CH-studs screw fixed to perimeter track]

[Ceiling is non-trafficable]



FRL 60/60/60 rated from above only Fire Report FAR 2891	CH-Stud Size (mm)		Span UDL 0.35 kPa (mm)		Ceiling Thickness (mm)	Sound Insulation for studs at 600mm centres and thinnest BMT Rw (Rw + Ctr)				Acoustic Report Day Design 3094-17
	CH-stud Depth	CH-stud BMT	300mm CH-stud Spacing	600mm CH-stud Spacing		No Insulation	50mm EarthWool 11 kg/m ³	60mm Polyester ASB3	75mm Polyester 14 kg/m ³	
	64	0.55 0.9	2330 2730	1850 2170	80	39 (32)	46 (39)	46 (38)	–	
102	0.55 0.9	3400 3880	1960 3160	118	42 (33)	48 (41)	48 (41)	48 (41)		

KSHWC2

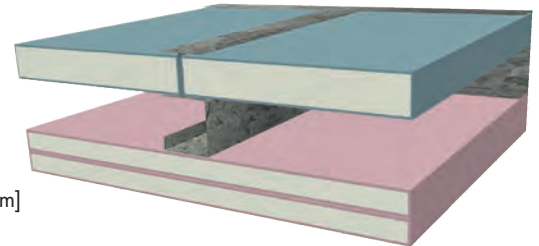
FRAME: 1 layer of 25mm **ShaftLiner** encased in CH-studs at either 300mm or 600mm spacing

CEILING LINING: 2 layers of 16mm **FireShield**

[Span based on Serviceability UDL 0.35 kPa and maximum deflection span/360 or 10mm]

[Ceiling joists are CH-studs screw fixed to perimeter track]

[Ceiling is non-trafficable]



FRL 60/60/60 rated from above and below +60min RISF Fire Report FAR 2036	CH-Stud Size (mm)		Span UDL 0.35 kPa (mm)		Ceiling Thickness (mm)	Sound Insulation for studs at 600mm centres and thinnest BMT Rw (Rw + Ctr)				Acoustic Report Day Design 3094-17
	CH-stud Depth	CH-stud BMT	300mm CH-stud Spacing	600mm CH-stud Spacing		No Insulation	50mm EarthWool 11 kg/m ³	60mm Polyester ASB3	75mm Polyester 14 kg/m ³	
	64	0.55 0.9	2740 3000	1650 2570	96	44 (36)	50 (42)	50 (42)	–	
102	0.55 0.9	3290 3920	1650 3090	134	46 (37)	52 (46)	52 (46)	52 (46)		

KSHWC3

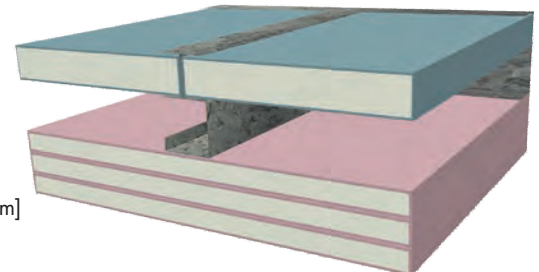
FRAME: 1 layer of 25mm **ShaftLiner** encased in CH-studs at either 300mm or 600mm spacing

CEILING LINING: 3 layers of 16mm **FireShield**

[Span based on Serviceability UDL 0.35 kPa and maximum deflection span/360 or 10mm]

[Ceiling joists are CH-studs screw fixed to perimeter track]

[Ceiling is non-trafficable]



FRL 90/90/90 rated from above and below +60min RISF Fire Report FAR 2036	CH-Stud Size (mm)		Span UDL 0.35 kPa (mm)		Ceiling Thickness (mm)	Sound Insulation for studs at 600mm centres and thinnest BMT Rw (Rw + Ctr)				Acoustic Report Day Design 3094-17
	CH-stud Depth	CH-stud BMT	300mm CH-stud Spacing	600mm CH-stud Spacing		No Insulation	50mm EarthWool 11 kg/m ³	60mm Polyester ASB3	75mm Polyester 14 kg/m ³	
	64	0.55 0.9	2600 2850	1420 2440	112	46 (37)	53 (45)	53 (45)	–	
102	0.55 0.9	2840 3790	1420 2660	150	49 (40)	55 (49)	55 (49)	55 (49)		

KSHWC4

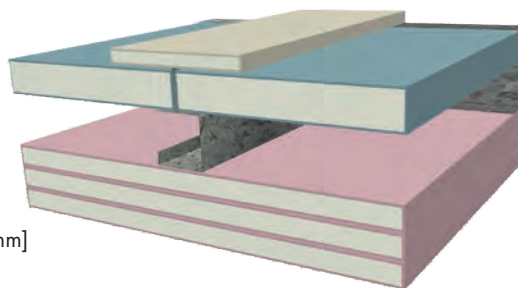
FRAME: 100mm wide strip of 10mm min plasterboard above exposed flange of CH-studs with 1 layer of 25mm **ShaftLiner** encased in CH-studs at either 300mm or 600mm spacing

CEILING LINING: 3 layers of 16mm **FireShield**

[Span based on Serviceability UDL 0.35 kPa and maximum deflection span/360 or 10mm]

[Ceiling joists are CH-studs screw fixed to perimeter track]

[Ceiling is non-trafficable]



FRL 120/120/120 rated from above and below +60min RISF Fire Report FAR 2036	CH-Stud Size (mm)		Span UDL 0.35 kPa (mm)		Ceiling Thickness (mm)	Sound Insulation for studs at 600mm centres and thinnest BMT Rw (Rw + Ctr)				Acoustic Report Day Design 3094-17
	CH-stud Depth	CH-stud BMT	300mm CH-stud Spacing	600mm CH-stud Spacing		No Insulation	50mm EarthWool 11 kg/m ³	60mm Polyester ASB3	75mm Polyester 14 kg/m ³	
	64	0.55	2600	1420	122	46 (37)	53 (45)	53 (45)	–	
	102	0.9	2850	2440	160	49 (40)	55 (49)	55 (49)	55 (49)	
0.55		2840	1420							
	102	0.9	3790	2660						

General Requirements

	Fire Rated
Install control joints in Horizontal Shaft Wall at: <ul style="list-style-type: none"> > 12m maximum intervals > All control joints in the structure > Any change in the substrate material. 	✓
All ceilings in this section are non-trafficable. Do not walk on plasterboard ceilings!	✓
Limit dead loads on plasterboard ceilings to 2 kg/m ² .	✓
Attach ceiling fixtures to framing members only. Ensure the framing is designed to carry any additional load.	✓
Only joint the face layer. As a minimum to achieve the FRL, only use paper tape and: <ul style="list-style-type: none"> > Two coats of MastaBase/MastaLongset, or > Three coats of MastaLite. 	✓
Use approved fire rated penetration details.	✓
Use fire sealant on all gaps and around perimeter, vermiculite plaster is not permitted.	✓

Framing

	Fire Rated
Fix the perimeter track at 600mm maximum centres and 100mm maximum from each end.	✓
Space CH-studs according to the joist spacing specified in the system table.	✓
Screw CH-studs to the perimeter track.	✓
For Shaft Wall framing components and construction sequence. <i>[Refer to Section 3.3.1]</i>	✓
Install additional framing members around openings.	✓

Plasterboard Layout

	Fire Rated
FireShield Layout	
Install FireShield perpendicular to the framing members.	✓
Stagger face layer butt joints by 600mm minimum on adjoining sheets and between layers.	✓
First layer butt joints must be backed by a CH-stud joist.	✓
Stagger recessed edges by 300mm minimum between layers.	✓
ShaftLiner Layout	
If the ceiling exceeds the length of ShaftLiner , the butt joints must be positioned towards the edge of the ceiling, away from the centre. <i>[Refer to Section 3.3.1]</i>	✓
Stagger ShaftLiner butt joints for adjacent panels and reinforce with horizontal CH-stud cut to fit between the horizontal CH-studs. <i>[Refer to Section 3.3.1]</i>	✓



- > Butt joints on underlying layers (not face layer) of **FireShield** may be made on the same framing member.
- > Minimise butt joints by using long sheets.

Plasterboard Fixing

	Fire Rated
Use the 'Screw Only Method'. Stud adhesive is not permitted.	✓
For installation of FireShield to CH-stud joists. <i>[Refer to Section 3.4.1]</i>	✓
Drive screws to just below the sheet surface, taking care not to break the paper linerboard.	✓
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
16mm FireShield	30mm screw	45mm screw*	65mm screw*
25mm ShaftLiner	45mm screw+	–	–

For steel ≤ 0.75mm BMT minimum 6g fine thread needle point screws.

For steel ≥ 0.75mm BMT minimum 6g fine thread drill point screws.

*38mm – 10g Laminating screws may be used as detailed in installation diagrams.

+ Use for securing ShaftLiner to J-track when the J-track is being used as an end stud.

**FIRE RATED
HORIZONTAL SHAFT WALL JUNCTIONS – ELEVATION**

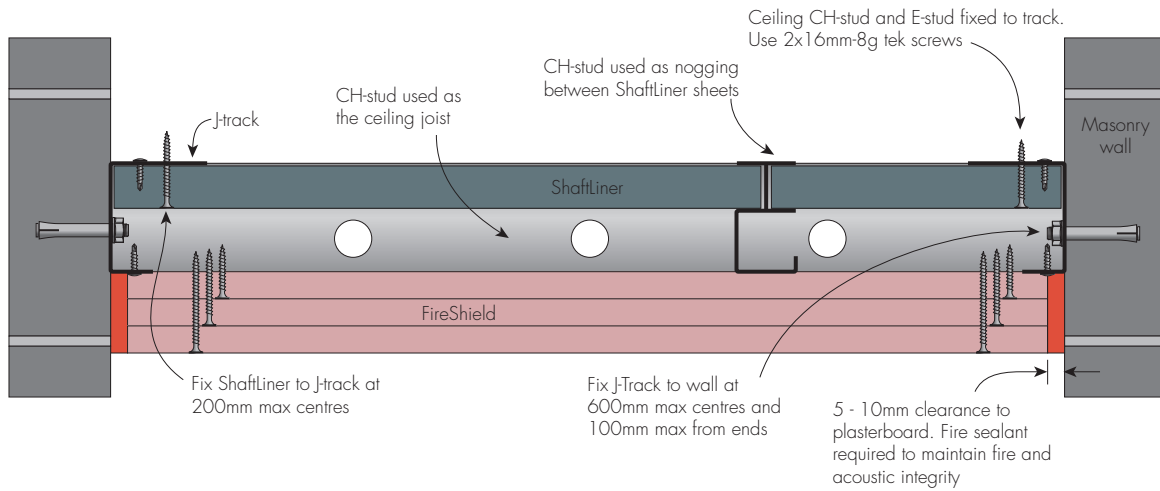


FIGURE 1 Horizontal Shaft Wall Non-Trafficable Ceiling to Masonry Wall

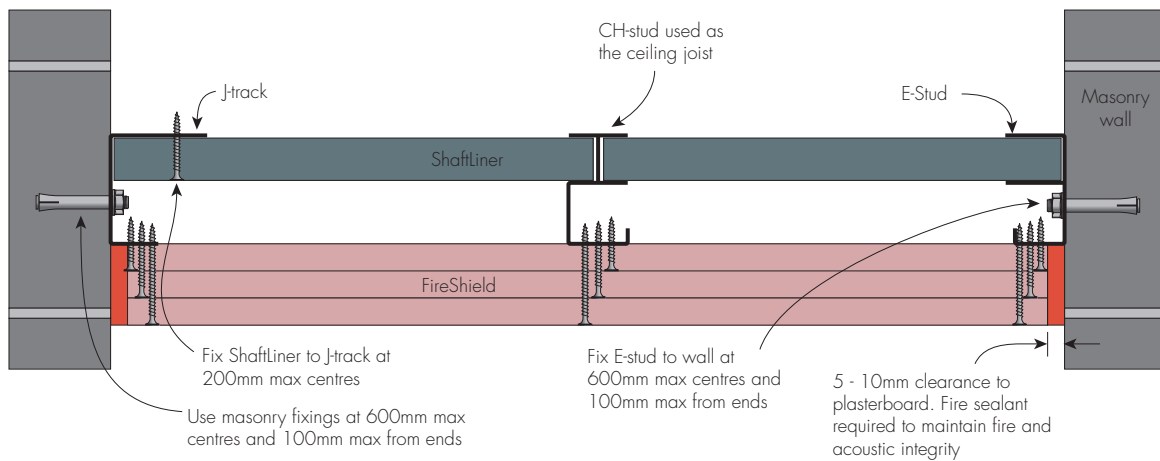


FIGURE 2 Horizontal Shaft Wall Non-Trafficable Ceiling to Masonry Wall

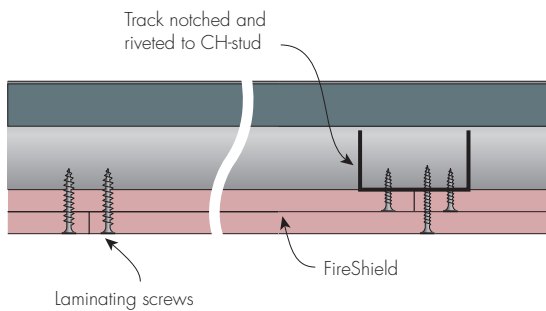
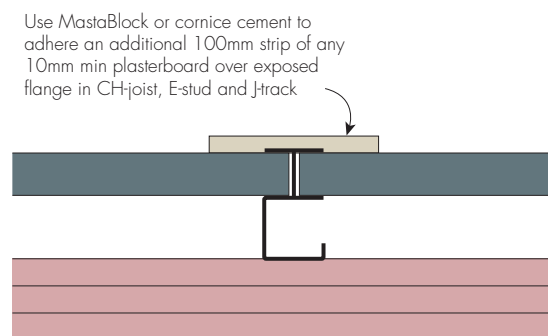


FIGURE 3 Alternate Butt Joint in FireShield



**FIGURE 4 Shaft Wall Ceiling Detail
System KSHWC4 only**