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3.6 Interhome High-Rise Wall

interhome high-rise systems are designed to meet fire protection and sound insulation requirements for walls separating Sole Occupancy Units (SOU). They are suited to slab-to-slab construction in Class 2 or 3 buildings (apartments, hotels or hostels).

interhome high-rise systems consist of twin steel framed walls with a central fire barrier of 25mm shaftliner or intershield encased in steel interhome H-studs. 16mm fireshield laminated to the central fire barrier is required when the outer wall linings do not extend to the soffit. All details in this section are for non-load bearing walls only.

The central fire barrier provides the primary fire protection and sound insulation barrier for the system, and thus simplifies installation by allowing non-fire rated installation of internal linings and non-fire rated penetrations of the outer wall linings during construction and also once a SOU is occupied.

Warning: All **inter**home high-rise systems are <u>not</u> suitable for use in timber or steel framed buildings with SOU's separated by timber or steel framed floors that require a Fire Resistance Level (FRL). An example of such a building would be a timber framed multi-residential building which has SOU's above one another.



IHS115	 1 layer of 13mm mastashield Steel stud framing Minimum 20mm air gap 25mm shaftliner or intershield encased in interhome H-studs Minimum 20mm air gap Steel stud framing 1 layer of 13mm mastashield 				- from	istance Level / 60/60 either side rt FAR 4815
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)			
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m ³ in both cavities	Pink [®] Parti 14 kg/m³ in l	tion 90mm ooth cavities	⁸ Insul Prediction v8 ⁷ Day Design
	110 (eg: 64 stud + 46 gap)	271	-	65 (50) ⁸	5008-29 Note: Impact
	130 (eg: 64 stud + 66 gap)	311	68 (50) ⁷			Sound Resistant - Discontinuous Construction

IHS125	 1 layer of 13mm so Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 13mm so 	Fire Resistance Level -/60/60 from either side Report FAR 4815		
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)	
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m³ R1.8 in both cavities	Day Design
	71 (eg: 51 stud + 20 gap)	193	64 (51)	5008-18 ¹ CSIRO TL601-01
	84 (eg: 64 stud + 20 gap)	219	66 (53) ¹	Note: Impact Sound Resistant -
	110	271	67 (54)	Discontinuous Construction
			•	·

IHS145	 1 layer of 13mm was Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 13mm was 	Fire Resistance Level -/60/60 from either side Report FAR 4815		
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)	
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m ³ R1.8 in both cavities	Day Design
	84 (eg: 64 stud + 20 gap)	219	65 (50)	5008-18 Note: Impact Sound Resistant -
	110 (eg: 64 stud + 46 gap)	271	66 (51)	Discontinuous Construction

IHS155	 1 layer of 13mm mastashield Steel stud framing 				Fire Res	istance Level
	 Minimum 20mm air gap 25mm shaftliner or intershield encased in interhome H-studs Minimum 20mm air gap Steel stud framing 1 layer of 13mm watershield 			from	/60/60 either side rt FAR 4815	
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)			
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m ³ in both cavities	Pink [®] Parti 14 kg/m³ in t		Insul Prediction v8
	110 (eg: 64 stud + 46 gap)	271	-	66 ((52)	Note: Impact Sound Resistant - Discontinuous
	130 (eg: 64 stud + 66 gap)	311	68 (50)	-		Construction

IHS153	 1 layer of 13mm ma Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 6mm Dur 	Fire Resistance Level -/60/60 from either side Report FAR 4815		
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)	
	Cavity size = stud size + air-gap		Pink [®] Partition 90mm 14 kg/m ³ R2.2 in both cavities	Insul Prediction v8
	110 (eg: 64 stud + 46 gap)	264	65 (51)	Note: Impact Sound Resistant - Discontinuous Construction

IHS150	 1 layer of 6mm Dur Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 6mm Dur 	Fire Resistance Level -/60/60 from either side Report FAR 4815		
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)	
	Cavity size = stud size + air-gap		Pink [®] Partition 90mm 14 kg/m ³ R2.2 in both cavities	Insul Prediction v8
	110 (eg: 64 stud + 46 gap)	257	65 (51)	Note: Impact Sound Resistant - Discontinuous Construction

Minimum Cavity On Both Sides (mm)Wall Width (mm)Sound Insulation Rw (Rw + Ctr)Cavity size = stud size + air gapPink® Partition 75mm 11 kg/m³ R1.8 in both cavitiesDay Design 5008-4884 (eg: 64 stud + 20 gap)21966 (52)Note: Impact Sound Resistant - Discontinuous Construction96 (eg: 76 stud + 20 gap)24366 (52)Dot Discontinuous Construction	IHS156	 1 layer of 13mm so Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 13mm was 	Fire Resistance Level -/60/60 from either side Report FAR 4815		
stud size + air gap in both cavities 5008-48 84 (eg: 64 stud + 20 gap) 219 66 (52) Note: Impact 96 (eg: 76 stud + 20 gap) 243 66 (52) Discontinuous		-			
84 (eg: 64 stud + 20 gap) 219 66 (52) Note: Impact 96 (eg: 76 stud + 20 gap) 243 66 (52) Sound Resistant				5	, ,
96 (eg: 76 stud + 20 gap) 243 66 (92) - Discontinuous		84 (eg: 64 stud + 20 gap)	219	66 (52)	
		96 (eg: 76 stud + 20 gap)	243	66 (52)	
		110	271	67 (53)	

• 1 layer of 13mm **sound**shield or **impact**shield or **tru**rock IHS154 Fire Resistance Level • Steel stud framing • Minimum 20mm air gap • 25mm shaftliner or intershield encased in interhome H-studs -/60/60 from either side • Minimum 20mm air gap • Steel stud framing • 1 layer of 6mm Duraliner Report FAR 4815 Wall Width Sound Insulation Minimum Cavity On Both Sides (mm) (mm) Rw (Rw + Ctr) Pink[®] Partition 75mm 11 kg/m³ R1.8 in both cavities Cavity size = stud size + air gap Day Design 5008-48 84 (eg: 64 stud + 20 gap) 212 66 (**52**) Note: Impact Sound Resistant 96 (eg: 76 stud + 20 gap) 236 66 (**52**) - Discontinuous 110 264 67 (**53**) Construction



IHS130	 Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 	gap intershield e gap eshield or mu Wall Width (mm)	Iltishield or impactshield encased in interhome H-studs Iltishield or impactshield Sound Insulation Rw (Rw + Ctr) Pink [®] Partition 75mm 11 kg/m ³ R1.8 in both cavities 64 (50) 66 (52) ² 67 (53)	Fire Resistance Level -/60/60 from either side Report FAR 4815 Day Design 5008-18 2CSIRO TL601-02 Note: Impact Sound Resistant - Discontinuous Construction	
·					
IHS135	 1 layer of 16mm fir Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 16mm fir 	Fire Resistance Level -/60/60 from either side Report FAR 4815			
	Minimum CavityWall WidthSound InsulationOn Both Sides (mm)(mm)Rw (Rw + Ctr)				
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m ³ R1.8 in both cavities	Day Design 5008-18	
	71 (eg: 51 stud + 20 gap)	199	64 (51)	Note: Impact	
	84 (eg: 64 stud + 20 gap)	225	66 (53)	Sound Resistant - Discontinuous	
	110 (eg: 64 stud + 46 gap)	277	67 (54)	Construction	
IHS151	 1 layer of 10mm was Steel stud framing Minimum 20mm air 25mm shaftliner or Minimum 20mm air Steel stud framing 1 layer of 10mm was 	Fire Resistance Level -/60/60 from either side Report FAR 4815			
	Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)		
	Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m³ R1.8 in both cavities	Day Design 5008-18	
	71 (eg: 51 stud + 20 gap)	199	65 (52)	Note: Impact	
	84 (eg: 64 stud + 20 gap)	225	67 (54)	Sound Resistant - Discontinuous	
	110 (eg: 64 stud + 46 gap)	277	68 (55)	Construction	
IHS112	 2 layers of 10mm m Steel stud framing 	asta shield o	r water shield	Fire Resistance Level	



 2 layers of 10mm m Steel stud framing 	Fire Resistance Level		
• Minimum 20mm air	inter shield e gap	ncased in interhome H-studs watershield	-/60/60 from either side Report FAR 4815
Minimum Cavity On Both Sides (mm)	Wall Width (mm)	Sound Insulation Rw (Rw + Ctr)	
Cavity size = stud size + air gap		Pink [®] Partition 75mm 11 kg/m ³ R1.8 in both cavities	Day Design 5008-18
71 (eg: 51 stud + 20 gap)	207	64 (51)	Note: Impact
84 (eg: 64 stud + 20 gap)	233	66 (53)	Sound Resistant - Discontinuous
110 (eg: 64 stud + 46 gap)	285	67 (54)	Construction

Components



AM150 Zincalume® steel

Use 3m H-stud for 3m Shaftliner. Use 3.6m H-stud for 3.6m Shaftliner.

Product Code	Length (mm)
IHS25-30	3000
IHS25-36	3600

FIGURE 1 interhome H-stud Profile



FIGURE 3 interhome aluminium clip Isometric



FIGURE 5 35x35mm Steel Backing Angle 0.7mm BMT Profile



Product Code	Length (mm)
T28-30	3000

FIGURE 2 J-Track Profile



FIGURE 4 Slotted Head Angle 0.75mm BMT

Profile and Perspective

Plasterboard

Central Fire Barrier

- > Siniat 25mm shaftliner
- > Siniat 25mm intershield Wall Linings
- > Siniat mastashield
- Siniat soundshield >
- > Siniat watershield
- > Siniat fireshield
- > Siniat multishield
- > Siniat trurock
- > Innova Duraliner

General Requirements

Use either **shaft**liner, or for added mould protection **inter**shield in the central fire barrier

Apply **bindex** fire and acoustic sealant to all gaps in the central fire barrier to maintain fire and acoustic integrity. If sheets or tracks are touch fitting and no gap exists, fire sealant is not required.

If **inter**home aluminium clips (CIH-L) are required, they are to connect **inter**home H-studs to the stud frames on either side. Aluminium will melt in a fire so the frame of the SOU on the fire side can detach from the central fire barrier.

Leave a gap of at least 20mm between the central fire barrier and the studs of both frames. A gap of at least 25mm is recommended on the side that has the **fire**shield laminated to the **shaft** liner.

Control joints are not required in the central fire barrier.

Refer to Section 3.1 for steel stud framing and internal lining requirements.

> Refer to the interhome high-rise 90 Minute Supplement for non-load bearing FRL -/90/90 walls.
 > Refer to the interhome Class 1 Systems and Installation Guide for load bearing walls with an FRL of 60/60/60 for separating Class 1 buildings from ground to roof.

Refer to the interhome Class 2 Systems and Installation Guide for load bearing walls with an FRL of 90/90/90 for Class 2 Type A buildings where the wall starts at a slab or other fire rated support and finishes under a roof.

Fire Resistance

All systems in this section are displayed with an FRL of -/60/60 to indicate that they are not usually used to support other building elements. However, these systems do have an FRL of 60/60/60 for the frame on the opposite side to fire attack. In a fire event, the framing on the fire side of the central fire barrier is considered to collapse before 60 minutes.

Where the outer wall linings do not extend full height to the soffit, 16mm **fire**shield is laminated to the 25mm **shaft**liner which also provides an FRL of -/60/60. The 16mm **fire**shield must overlap a minimum of 150mm below the ceiling [refer to construction details].

The outer wall lining and cavity insulation of any **inter**home high-rise system can be used on one side of a different system without reducing its FRL. The linings may also transition along a wall from one Interhome High-Rise system to another.



Sound Insulation

Services installed in one cavity have an acoustic rating to the other side of the **inter**home high-rise wall of at least Rw + Ctr 40 which meets the requirements of the NCC for walls separating soil, waste or water supply pipes from a habitable room.

When the internal lining and cavity insulation of one **inter**home high-rise system is used on one side of a different **inter**home high-rise system, the acoustic rating is the lower of the two provided that the central fire barrier and stud cavity sizes are the same.

Framing

Use 3m **inter**home H-studs with 3m **shaft**liner panels and 3.6m **inter**home H-studs with 3.6m **shaft**liner panels. Use **inter**home aluminium clips as shown in Figure 16 for walls higher than the H-stud length and 7.2m.

Siniat Internal Wind Load Calculator



Table 1 Screw Type and Minimum Size for Steel Framing

Fixing Aluminium Clips	Fastener
interhome aluminium clips to steel interhome H-studs	8g x 16mm fine thread screw
interhome aluminium clips to steel interhome H-studs through 16mm fireshield	8g x 30mm fine thread screw
General Steel Framing	Fastener
0.5 - 0.75mm steel framing	8g x 16mm fine thread screw
1.15mm steel framing	10g x 16mm fine thread screw

Refer to 'Fasteners and Anchors' in Section 2 for typical fasteners and anchors available.

Plasterboard Fixing

shaftliner or intershield are friction fitted into the interhome H-studs and J-tracks

Install the outer (internal) wall linings with the 'Screw and Adhesive Method' or the 'Screw Only Method'. Both methods can be used to achieve the fire rating.

Table 2 Screw Type and Minimum Size for the Installation of Plasterboard to Steel

Plasterboard Thickness	1st Layer
10mm	6g x 25mm screw
13mm	6g x 25mm screw
16mm	6g x 32mm screw

1. For steel \leq 0.75mm BMT, use fine thread needle point screws.

2. For steel \geq 0.75mm BMT, use fine thread drill point screws.

3. 10g x 38mm Laminating screws may be used as detailed in installation diagrams.

Installation Sequence







Fire Rated Interhome High-Rise Head and Base Detail - FRL -/60/60 - Wall Height ≤ 3.6m



Section



Fire Rated

Interhome High-Rise Head Details with CAC Ceiling - FRL -/60/60 - Wall Height ≤ 3.6m Fix Slotted angle to slab at 600mm maximum Bindex Fire and Acoustic Sealant centres and 100mm maximum from ends required to maintain integrity 20mm clearance to Fix seismic compliant stud and plasterboard anchors to slab at 600mm maximum centres and 100mm maximum from ends 16mm Fireshield laminated to 25mm Shaftliner at 400x400mm maximum centres and 50mm from sheet edges. 300mm maximum between soffit and top of wall lining Fix nogging to both sides of stud using 8g button head or 10g wafer / flat head Wall insulation must be screws or rivets above ceiling height Ceiling insulation must be minimum 75mm x 11 kg/m³ Pink[®] Partition Minimum 13mm Siniat plasterboard extending 1200mm away from wall Extend 16mm on both sides Fireshield 150mm below ceiling CAC Rw + Ctr 50 CAC Rw + Ctr 50 Siniat plasterboard and FIGURE 14 Wall Head insulation as per system table Slotted Steel Angle above Shaftliner Section Fix Slotted angle to slab at 600mm maximum Bindex Fire and Acoustic Sealant centres and 100mm maximum from ends required to maintain integrity 20mm clearance to Fix seismic compliant anchors stud and plasterboard to slab at 600mm maximum centres and 100mm maximum from ends 16mm Fireshield laminated to 25mm Shaftliner at 400x400mm maximum centres and 50mm from 300mm maximum between sheet edges. soffit and top of wall lining Fix nogging to both sides of stud using 8g button head or 10g wafer / flat head Wall insulation must be full height screws or rivets Minimum 13mm Siniat plasterboard Extend 16mm Fireshield 150mm below ceiling CAC Rw + Ctr 50 CAC Rw + Ctr 50 Siniat plasterboard and FIGURE 15 Wall Head insulation as per system table

Slotted Steel Angle above Shaftliner Section

Fire Rated Interhome High-Rise Head Details with CAC Ceiling - FRL -/60/60 - Wall Height 3.6m to 7.2m



Slotted Steel Angle above Shaftliner Section



Fire Rated Interhome High-Rise Head Details with CAC Ceiling - FRL -/60/60



Slotted Steel Angle above Shaftliner Section

Fire Rated Interhome High-Rise Details - FRL -/60/60 Fill any gaps with Bindex Fire and Acoustic Sealant enn

J-Track

FIGURE 18 Wall End to Masonry

Bindex Fire and Acoustic Sealant required to maintain integrity

Fix at 600mm maximum centres and 100mm maximum from ends

STAT.

2888888

J-track



FIGURE 19 Wall End to Masonry Steel angle



FIGURE 22 Wall End to Corridor Wall Improved Acoustic Detail - J-track Plan

Fill any gaps with Bindex Fire and Acoustic Sealant to maintain integrity

FIGURE 23 Wall End to Corridor Wall Improved Acoustic Detail - Steel angle Plan



Fire Rated

Interhome High-Rise Details - FRL -/60/60

Steel toggle bolts to plasterboard at 600mm maximum centres and 100mm maximum from ends, or 6g x 41mm plasterboard screws through Shaftliner into stud at 300mm maximum centres Siniat plasterboard and insulation as per system table



FIGURE 27 Wall Corner Plan Siniat plasterboard and insulation as per system table FIGURE 28 Corridor Wall to Inter-tenancy Wall Junction Plan





Plan

Plan



Fire Rated Interhome High-Rise Details - FRL -/60/60 Siniat plasterboard





Table 3 Horizontal Furring Channel Span Table over Column

W _{ult} (kPa)	W _{ser} (k Pa)	28mm Furring Channel (mm)
0.39	0.25	1350
0.47	0.3	1280
0.54	0.35	1240
0.59	0.25	1210
0.71	0.3	1150
0.83	0.35	1100

Notes

1. Furring channels at 300mm maximum centres

2. Lateral deflection limited to span/240

3. An alternative framing design may be used provided the wall system has the 'structural adequacy' part to the Fire Resistance Level for the time period required.

from ends

8g framing screws recommended

for 0.3 - 0.75mm BMT Siniat steel profiles.10g screws recommended for 1.15 - 1.5mm BMT Siniat steel profiles

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Fire Rated Interhome High-Rise Details - FRL -/60/60



Fire Rated Interhome High-Rise Details - FRL -/60/60





OUTSIDE

FIGURE 48 Interhome High-Rise Wall Transition to Curtain Wall Mullion Plan 8g framing screws recommended for 0.3 - 0.75mm BMT Siniat steel profiles. 10g screws recommended for 1.15 - 1.5mm BMT Siniat steel profiles



Fire Rated



Interhome High-Rise Penetration Details - FRL -/60/60

FIGURE 49 Plumbing and Electrical Penetrations in Wall Linings Plan

Fire Rated Patching of Central Fire Barrier for Service Penetrations



FIGURE 50 Penetrations Through Central Fire Barrier Along Ceiling Cavity Perspective



FIGURE 51 Local Patch for Penetrations Through Central Fire Barrier With example service penetrations Perspective





Fire Rated Patching of Central Fire Barrier for Service Penetrations

FIGURE 52 Penetrations Through Central Fire Barrier Along Ceiling Cavity With example service penetration Section

Fire Rated Interhome High-Rise Penetration Details



















3.6





Fire Rated Interhome High-Rise Penetration Details





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Section - FRL -/60/60



Fire Rated Patching of Central Fire Barrier - 300 x 300mm maximum opening

FIGURE 76 Fire Rated Patch for Shaftliner panel Section - FRL -/60/60

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