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4.1 External Steel Stud Walls

External steel framed walls protect the inside from weather, noise and when applicable, fire. They must also comply with local energy efficiency provisions.

Fire rated systems in this section can satisfy the National Construction Codes Fire Safety requirements for spandrel walls and walls built close to a fire source feature such as a property boundary. These walls are often required to be fire rated from the outside only.

multishield forms part of the outer wall adding fire and sound resistance which is covered by a moisture barrier and external cladding for weather protection.

This section contains systems, installation instructions and construction details for fire rated and non-fire rated external steel framed walls.

System Directory

System	loside Lining	Outer Lining	Ecamo	EDI	Aco	ustics ¹
System		and Cladding	Fidille	FNL	Rw	Rw+Ctr
SSW73	1 x 10mm masta shield	6.0mm fibre cement sheeting	Steel stud	-	42	31
SSW274	2 x 10mm sound shield	6.0mm fibre cement sheeting	Steel stud	-	47	35
SSW378	3 x 13mm fire shield	6.0mm fibre cement sheeting	Steel stud	-	52	39
SSW470	1 x 10mm masta shield	1 x 13mm multi shield plus any external cladding	Steel stud	30/30/30 from outside	41	31
SSW473	1 x 10mm masta shield	1 x 16mm multi shield plus any external cladding	Steel stud	60/60/60 from outside	42	32
SSW471	1 x 10mm masta shield	2 x 13mm multi shield plus any external cladding	Steel stud	90/90/90 from outside	46	35
SSW472	1 x 10mm masta shield	3 x 13mm multi shield plus any external cladding	Steel stud	120/120/120 from outside	50	38
SSW491	Optional	2 x 13mm multi shield plus any external cladding	Steel stud	30/30/30 from outside	34	30
SSW494	Optional	2 x 16mm multi shield plus any external cladding	Steel stud	60/60/60 from outside	35	31
SSW492	Optional	3 x 13mm multi shield plus any external cladding	Steel stud	90/90/90 from outside	37	34
SSW495	Optional	3 x 16mm multi shield plus any external cladding	Steel stud	120/120/120 from outside	38	35
SSW496	1 x 13mm fire shield	1 x 13mm multi shield plus any external cladding	Steel stud	-/60/60	43	32
SSW476	1 x 16mm fire shield	1 x 16mm multi shield plus any external cladding	Steel stud	60/60/60 or -/90/90 using glasswool	44	35
SSW477	1 x 16mm fire shield	2 x 13mm multi shield plus any external cladding	Steel stud	90/90/90 from outside 60/60/60 from inside	48	39
SSW478	2 x 13mm fire shield	2 x 13mm multi shield plus any external cladding	Steel stud	90/90/90	53	45
SSW479	2 x 16mm fire shield	2 x 16mm multi shield plus any external cladding	Steel stud	120/120/120	54	37
SSW70	1 x 10mm masta shield	90mm masonry	Steel stud	60/60/60 from outside	58	47
SSW373	1 x 16mm fire shield	90mm masonry	Steel stud	60/60/60	59	49
SSW371	2 x 13mm fire shield	90mm masonry	Steel stud	90/90/90	62	53
SSW374	2 x 16mm fire shield	90mm masonry	Steel stud	120/120/120	65	54

1. Sound Insulation values determined using glasswool insulation.

1

SSVV/S	• 1 layer	r of 10mi	m masta shield or 1	Omm water sł	nield		
	• Minim	ium 90m	im steel stud fram	ng at 600mm	n maximum c	entres	
	 Option 	nal wall i	nsulation				
	• Wall w	/rap + th	ermal break				
	• 1 layer	of minir	mum 6mm James I	Hardie™ fibre	cement shee	eting	
	Stud Size	\A/idth	Inculation Bathway	Sound Insulation			
	(mm)	(mm)	R-Value (m ² K/W)	Rw (Rw + Ctr)			
				No insulation	Pink [®] Batts	Wall R2 OHD	
							Report
		120	0.63 plus	70 (00)	10	(74)	locul
	90	approx	insulation R value*	38 (29)	42	(31)	111501
CC141074	• 2 lave	rs of 10n	nm sound shield or	10mm opal			
5511274	• Minim	um 90m	im steel stud fram	no at 600mm	n maximum c	entres	
	Option	nal wall i	nsulation				
	• Wall w	/rap + th	ermal break				
	• 1 layer	of minir	mum 6mm James I	- Hardie™ fibre	cement shee	eting	
						5	
	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Rw (Rw + Ctr)			
	. ,	. ,		No ioculation	Diak [®] Patta		
					PILIK DOLLS		Report
		130	0.72 plus				
	90	approx	insulation R value*	43 (31)	47	(35)	Insul
~							
	. 7	6 4 7					
	• 5 lave	rs of 15m	nm fire shield or 13	mm multi shie	ld		
SSW378	• 3 laye	rs of 13n ium 90m	nm fire shield or 13 Im steel stud fram	mm multi shie ing at 600mm	ld 1 maximum c	entres	
SSW378	 Jiaye Minim Option 	rs of 13m ium 90m nal wall i	nm fire shield or 13 nm steel stud fram nsulation	mm multi shie ing at 600mm	ld 1 maximum c	entres	
SSW378	 3 laye Minim Option Wall w 	rs of 13m ium 90m nal wall i vrap + th	nm fire shield or 13 nm steel stud fram nsulation ermal break	mm multi shie ing at 600mm	ld 1 maximum c	entres	
SSW378	 Minim Option Wall w 1 layer 	rs of 13m ium 90m hal wall i vrap + th r of minir	nm fire shield or 13 im steel stud fram nsulation ermal break mum 6mm James I	mm multi shie ng at 600mn Hardie™ fibre	ld n maximum c cement shee	entres	
SSW378	 Minim Option Wall w 1 layer 	rs of 13m ium 90m hal wall i vrap + th r of minir	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I	mm multi shie ing at 600mm Hardie™ fibre	ld n maximum c cement shee	entres eting	
SSW378	 Minim Option Wall w 1 layer 	rs of 13m num 90m nal wall i vrap + th r of minin	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I	mm multi shie ing at 600mm Hardie™ fibre	ld n maximum c cement shee	entres eting	
SSW378	 Stud Size (mm) 	rs of 13m num 90m nal wall i rrap + th of minin Width (mm)	nm fireshield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr)	ld n maximum c cement shee	entres eting	
SSW378	 Stud Size (mm) 	rs of 13m num 90m nal wall i rap + th of minin Width (mm)	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr)	ld n maximum c cement shee	entres eting	
SSW378	 Stud Size (mm) 	rs of 13m num 90m nal wall i (rap + th of minin (mm)	Inm fireshield or 13 Inm steel stud fram Insulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W)	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation	ld n maximum c cement shee Pink [®] Batts	entres eting Wall R2.0HD	Report
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 	rs of 13m num 90m nal wall i rrap + th of minin Width (mm) 150	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation	ld n maximum c cement shee Pink [®] Batts	entres eting Wall R2.0HD	Report
SSW378	 Stud Size (mm) 90 	rs of 13m num 90m nal wall i (rap + th r of minin (mm) 150 approx	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m²K/W) 0.79 plus insulation R value*	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36)	ld n maximum c cement shee Pink [®] Batts	entres eting Wall R2.OHD (39)	Report
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 	vrap + th width (mm) 150 approx	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m²K/W) 0.79 plus insulation R value*	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36)	ld n maximum c cement shee Pink [®] Batts 53 i	entres eting Wall R2.0HD (39)	Report Insul
	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer 	rs of 13m num 90m nal wall i rap + th of minin Width (mm) 150 approx	nm fire shield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value*	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh	Id n maximum c cement shee Pink [®] Batts 53 (hield	entres eting Wall R2.0HD (39)	Report Insul
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SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 	vrap + th of minin Width (mm) 150 approx	In fireshield or 13 Im steel stud fram Insulation ermal break mum 6mm James I Insulation Pathway R-Value (m²K/W) 0.79 plus insulation R value*	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) 0mm watersh ng at 600mm	Id n maximum c cement shee Pink [®] Batts 53 n hield n maximum	entres eting Wall R2.OHD (39) Fire Resista 30/30	Report Insul
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer 	rs of 13m num 90m nal wall i rap + th of minin width (mm) 150 approx r of 10mn num 90m es nal wall i	In fireshield or 13 In steel stud fram Insulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* m mastashield or 1 In steel stud fram Insulation m multishield or 13	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ing at 600mm mm trurock	ld n maximum c cement shee Pink [®] Batts 53 n hield n maximum	entres eting Wall R2.OHD (39) Fire Resista 30/30 rated from the	Report Insul ance Level 0/30 e outside only
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w 	rs of 13m nal wall i rap + th of minin width (mm) 150 approx r of 10mm som r of 10mm som r of 10mm som r of 10mm som r of 10mm som r of 10mm som r of 13mm r rap	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* 0.80 plus m mastashield or 1 m steel stud fram nsulation m multishield or 13	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watershing at 600mm mm trurock	ld n maximum c cement shee Pink® Batts 53 n hield n maximum	entres eting Wall R2.0HD (39) Fire Resista 30/30 rated from the Rep	Report Insul
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w Any ex 	rs of 13m nal wall i vrap + th of minin width (mm) 150 approx 150 approx	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* 0.79 plus insulation R value m mastashield or 1 m steel stud fram nsulation m multishield or 13 vall cladding with a	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ing at 600mm mm trurock drained and v	Id n maximum c cement shee Pink [®] Batts 53 n hield n maximum ented cavity	entres eting Wall R2.OHD (39) Fire Resista 30/30 rated from the Rep FC13	Report Insul ance Level 0/30 e outside only ort 921
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w Any extended of the second s	rs of 13m num 90m nal wall i vrap + th of minin width (mm) 150 approx r of 10mm num 90m es nal wall i r of 13mm vrap kternal w	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* 0.79 plus insulation R value m mastashield or 1 m steel stud fram nsulation m multishield or 13 vall cladding with a	mm multi shie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm water sh ng at 600mm mm tru rock drained and v	Id n maximum c cement shee Pink [®] Batts 53 n hield n maximum ented cavity	entres eting Wall R2.OHD (39) Fire Resista 30/30 rated from the Rep FC13	Report Insul ance Level D/30 e outside only ort 921
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minime centre Option 1 layer Winime centre Option 1 layer Minime centre Stud Size (mm) 	rs of 13m num 90m nal wall i vrap + th of minin width (mm) 150 approx 150 approx	Insulation R value* 0.79 plus insulation R value* 0.79 plus insulation R value* m mastashield or 1 m steel stud fram nsulation m multishield or 13 rall cladding with a Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) 0mm watersh ng at 600mm mm trurock drained and v Sound Insulation Rw (Rw + Ctr)	Id n maximum c cement shee Pink® Batts 53 n hield n maximum ented cavity	entres eting Wall R2.0HD (39) Fire Resista 30/30 rated from the Rep FC13	Report Insul ance Level D/30 e outside only ort 921
SSW378	 Stud Size (mm) 90 1 layer 1 layer Minim centre Option 1 layer Minim centre Option 1 layer Wall w Any ex Stud Size (mm) 	rs of 13m num 90m nal wall i vrap + th of minin width (mm) 150 approx 150 approx	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* m mastashield or 13 m steel stud fram nsulation R n multishield or 13 rall cladding with a Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ing at 600mm mm trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	Id n maximum c cement shee Pink® Batts 53 n hield n maximum ented cavity	entres eting Wall R2.0HD (39) Fire Resista 30/30 rated from the Rep FC13	Report Insul ance Level 0/30 e outside only ort 921
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w Any ex Stud Size (mm) 	rs of 13m num 90m nal wall i (rap + th of minin width (mm) 150 approx r of 10mm s nal wall i r of 13mm (rap kternal w Width (mm)	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* m mastashield or 1 m steel stud fram nsulation m multishield or 13 vall cladding with a Insulation Pathway R-Value (m ² K/W)	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ng at 600mm mm trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	Id n maximum c cement shee Pink® Batts 53 n hield n maximum ented cavity Pink® Batts	entres eting Wall R2.0HD (39) Fire Resista 30/30 rated from the Rep FC13 Wall R2.0HD	Report Insul Ance Level D/30 e outside only ort 921
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minime centre Option 1 layer Wall w Any ex Stud Size (mm) 	rs of 13m num 90m nal wall i (rap + th of minin (mm) 150 approx r of 10mn son of 10mn son of 10mn son of 10mn (mm) vap kternal w Width (mm) Width (mm)	nm fireshield or 13 nm steel stud fram nsulation ermal break mum 6mm James I Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* m mastashield or 1 m steel stud fram nsulation m multishield or 13 rall cladding with a Insulation Pathway R-Value (m ² K/W) 0.84 plus	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ng at 600mm mm trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	Id n maximum c cement shee Pink® Batts 53 f hield n maximum ented cavity Pink® Batts	entres eting Wall R2.0HD (39) Fire Resista 30/30 rated from the Rep FC13 Wall R2.0HD (21)	Report Insul ance Level 0/30 e outside only ort 921
SSW378	 Staye Minim Option Wall w 1 layer Stud Size (mm) 90 1 layer Minim centre Option 1 layer Minim centre Option 1 layer Mall w Any ex Stud Size (mm) 90 	rs of 13m num 90m nal wall i (rap + th of minin of minin 150 approx	Insulation Pathway R-Value (m ² K/W) 0.79 plus insulation R value* 0.79 plus insulation R value m mastashield or 1 m steel stud fram nsulation m multishield or 13 vall cladding with a Insulation Pathway R-Value (m ² K/W) 0.84 plus insulation R value*	mm multishie ing at 600mm Hardie [™] fibre Sound Insulation Rw (Rw + Ctr) No insulation 48 (36) Omm watersh ng at 600mm mm trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 37 (29)	Id n maximum c cement shee Pink® Batts 53 n hield n maximum ented cavity Pink® Batts A1	entres eting Wall R2.OHD (39) Fire Resista 30/30 rated from the Rep FC13 Wall R2.OHD (31)	Report Insul ance Level 0/30 e outside only ort 921

* R-value based on 40mm batten cavity and anti-glare foil wall wrap - does not include thermal bridging pathway. Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

EXTERNAL STEEL STUD WALLS



SSW473	 1 laye Minim centre Option 1 laye Wall v Any ex 	r of 10mi num 90m es nal wall i r of 16mi vrap kternal w	m masta shield or 1 nm steel stud fram nsulation m multi shield or 16 vall cladding with a	Omm water sh ing at 600mm omm tru rock drained and v	nield n maximum ented cavity	Fire Resistance Level 60/60/60 rated from the outside onl Report FC13921	
2 4	Stud Size	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Bw (Bw + Ctr)			
	()			No insulation	Pink [®] Batts	Wall R2.0HD	
	90	175 approx	0.86 plus insulation R value*	38 (30)	42	(32)	Report Insul
SSW471	• 1 laye • Minim	r of 10m 10m 90m	m masta shield or 1 nm steel stud fram	0mm water sh ing at 600mm	nield n maximum	Fire Resista	ance Level
	centre • Option • 2 laye • Wall v • Any ex	es nal wall i rs of 13n vrap xternal w	nsulation nm multi shield or 1 vall cladding with a	3mm tru rock drained and v	ented cavity	90/90 rated from the Rep FC13	0/90 e outside only ort 921
e 4	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m²K/W)	Sound Insulation Rw (Rw + Ctr)			
				No insulation	Pink [®] Batts	Wall R2.0HD	
	90	185 approx	0.91 plus insulation R value*	43 (33)	46	(35)	Report Insul
SSW472	 1 laye Minim centra Option 3 laye Wall v Any ex 	r of 10mi num 90m es nal wall i rs of 13n vrap kternal w	m masta shield or 1 nm steel stud fram nsulation nm multi shield or 1 vall cladding with a	Omm water sh ing at 600mm 3mm tru rock drained and v	nield n maximum ented cavity	Fire Resista 120/12 rated from the Rep FC13	o/120 e outside only ort 921
2 4	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m²K/W)	Sound Insulation Rw (Rw + Ctr)		1	
				No insulation	Pink [®] Batts	Wall R2.0HD	
	90	195 approx	0.99 plus insulation R value*	46 (36)	50	(38)	Report Insul
SSW491	 Option Option Minim centre 2 laye Wall w 	nal intern nal wall i num 90m es rs of 13m yran	nal wall lining nsulation nm steel stud fram nm multi shield or 1	ing at 600mm 3mm tru rock	n maximum	Fire Resista 30/30 rated from the Rep	ance Level D/30 e outside only ort



 2 layer Wall w Any ex 	rap ternal w	all cladding with a	drained and v	ented cavity	Report FC13921		
Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Rw (Rw + Ctr)				
			No insulation	Pink [®] Batts \	Wall R2.0HD	Report	
90	175 approx	0.85 plus insulation R value*	34 (30)	34 (30)	Day Design 3094-33	

* R-value based on 40mm batten cavity and anti-glare foil wall wrap - does not include thermal bridging pathway. Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

SSW494	 Optior 	nal interr	nal wall lining				
	Optior	nal wall i	nsulation			Fire Resista	ance Level
		um 90m :s	im steel stud fram	ing at 600mm	n maximum	60/60 rated from the)/60 outside only
	• 2 layer	rs of 16n	nm multi shield or 1	l6mm tru rock		Dee	. obcoloc only
	• Wall w	rap				FC13	ort 921
	• Any ex	ternal w	all cladding with a	drained and v	ented cavity		
2 Q	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m²K/W)	Sound Insulation Rw (Rw + Ctr)			
				No insulation	Pink [®] Batts	Wall R2.0HD	
							Report
	90	180	0.89 plus	35 (31)	35	(31)	Day Design 3094-33
		appiox					
	. Option						
SSW492	Option Option	nal wall i	nsulation			Fire Resista	ance Level
	• Minim	um 90m	m steel stud frami	ng at 600mm	maximum	90/90	1/90
	centre	S				rated from the	outside only
	 3 layer Wall w 	rs of 13m	nm multi shield or 1	3mm tru rock		Rep	ort
	 Any ex 	ternal w	all cladding with a	drained and v	ented cavity	FC13	921
0	Stud Size	Width	Insulation Pathway	Sound Insulation			
9	(mm)	(mm)	R-Value (m ² K/W)	Rw (Rw + Ctr)			
				No insulation	Pink [®] Batts	Wall R2.0HD	Report
		180	0.93 plus				Day Design
	90	approx	insulation R value*	37 (34)	37 ((34)	3094-33
SSW495	 Optior 	nal interr	nal wall lining				
SSW495	 Optior Optior 	nal interr nal wall i	nal wall lining nsulation			Fire Resista	ance Level
SSW495	 Option Option Minim centre 	nal interr nal wall i um 90m es	nal wall lining nsulation Im steel stud fram	ing at 600mr	n maximum	Fire Resista	ance Level 0/120
SSW495	 Option Option Minim centre 3 layer 	nal interr nal wall i um 90m es rs of 16n	nal wall lining nsulation Im steel stud fram nm multi shield or 1	ing at 600mn I6mm tru rock	n maximum	Fire Resista 120/12 rated from the	ance Level 0/120 e outside only
SSW495	 Option Option Minim centre 3 layer Wall w 	nal interr nal wall i um 90m es rs of 16n yrap	nal wall lining nsulation Im steel stud fram nm multi shield or 1	ing at 600mn I6mm tru rock	n maximum	Fire Resista 120/12 rated from the Rep FC13	ance Level 0/120 e outside only ort 921
SSW495	 Option Option Minim centre 3 layer Wall w Any ex 	nal interr nal wall i um 90m es rs of 16n rrap sternal w	nal wall lining nsulation im steel stud fram nm multi shield or 1 iall cladding with a	ing at 600mn I6mm tru rock drained and v	n maximum ented cavity	Fire Resista 120/12 rated from the Rep FC13	ance Level 0/120 e outside only ort 921
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es of 16n erap eternal w (mm)	nal wall lining nsulation Im steel stud fram nm multi shield or 1 Iall cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr)	n maximum ented cavity	Fire Resista 120/12 rated from the Rep FC13	once Level 0/120 e outside only ort 921
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal interr nal wall i um 90m es rs of 16n rrap tternal w Width (mm)	nal wall lining nsulation im steel stud fram nm multi shield or f all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	n maximum ented cavity Pink [®] Batts	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD	ance Level 0/120 e outside only ort 921
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es rs of 16n rrap eternal w Width (mm)	nal wall lining nsulation Im steel stud fram Im multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	n maximum ented cavity Pink [®] Batts	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD	ance Level 0/120 e outside only ort 921 Report
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	al intern nal wall i um 90m es of 16n erap eternal w Width (mm)	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35)	n maximum ented cavity Pink [®] Batts 38	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35)	ance Level 0/120 e outside only ort 921 Report Day Design 3094-33
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es rs of 16n rrap eternal w Width (mm) 195 approx	nal wall lining nsulation Im steel stud fram Im multi shield or 1 all cladding with a Insulation Pathway R-Value (m²K/W) 0.98 plus insulation R value*	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35)	n maximum ented cavity Pink [®] Batts 38	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35)	Report Day Design 3094-33
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SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es rs of 16n rrap tternal w Width (mm) 195 approx	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value*	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35)	n maximum ented cavity Pink [®] Batts 38	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	al intern nal wall i um 90m es of 16n erap eternal w Width (mm) 195 approx	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value*	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35)	n maximum ented cavity Pink [®] Batts 38	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level /60
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es rs of 16n rrap eternal w width (mm) 195 approx	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m²K/W) 0.98 plus insulation R value*	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35)	n maximum ented cavity Pink [®] Batts 38 n maximum	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60 rated from	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level /60 both sides
SSW495	 Option Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	al intern nal wall i um 90m s of 16n rrap sternal w Width (mm) 195 approx	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* m fire shield im steel stud fram nsulation m multi shield or 13	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm	n maximum ented cavity Pink [®] Batts 38	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60 rated from Rep	ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 ance Level /60 both sides ort
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	nal intern nal wall i um 90m es rs of 16n rrap ternal w width (mm) 195 approx of 13mr um 90m es nal wall i r of 13mr rrap	nal wall lining nsulation im steel stud fram im multi shield or 1 all cladding with a insulation Pathway R-Value (m²K/W) 0.98 plus insulation R value* n fire shield im steel stud fram nsulation n multi shield or 13 all cladding with a	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm mm tru rock drained and v	n maximum ented cavity Pink [®] Batts 38 n maximum	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level /60 both sides ort 921
SSW495	 Option Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w Any ex Stud Size 	al intern nal wall i um 90m s of 16n rrap ternal w width (mm) 195 approx of 13mr um 90m s nal wall i of 13mr rrap ternal w	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* m fire shield im steel stud fram nsulation n multi shield or 13 all cladding with a	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm mm tru rock drained and v Sound Insulation	n maximum ented cavity Pink [®] Batts 38 n maximum	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level /60 both sides ort 921
SSW495	 Option Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	al intern nal wall i um 90m es rs of 16n rrap tternal w width (mm) 195 approx of 13mr um 90m es nal wall i r of 13mr rrap tternal w width (mm)	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* n fire shield im steel stud fram nsulation n multi shield or 13 all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm fmm tru rock drained and v Sound Insulation Rw (Rw + Ctr)	ented cavity Pink [®] Batts 38 n maximum ented cavity	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13	ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 ance Level /60 both sides ort 921
SSW495	 Option Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 90 1 layer Minim centre Option 1 layer Mail w Any ex Stud Size (mm)	al intern nal wall i um 90m s of 16n rrap ternal w width (mm) 195 approx r of 13mr um 90m s nal wall i r of 13mr rrap ternal w Width (mm)	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* 0.98 plus insulation R value* n fire shield im steel stud fram nsulation n multi shield or 13 all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm omm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	ented cavity Pink [®] Batts 38 n maximum ented cavity Pink [®] Batts	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13 Wall R2.0HD	Report Day Design 3094-33
SSW495	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 	al intern nal intern nal wall i um 90m es rs of 16n rrap tternal w width (mm) 195 approx of 13mr um 90m es nal wall i r of 13mr rrap tternal w Width (mm)	nal wall lining nsulation im steel stud fram nm multi shield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* n fire shield im steel stud fram nsulation n multi shield or 13 all cladding with a Insulation Pathway R-Value (m ² K/W)	ing at 600mm I6mm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm fmm tru rock drained and v Sound Insulation Rw (Rw + Ctr) No insulation	ented cavity Pink® Batts 38 n maximum ented cavity Pink® Batts	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13 Wall R2.0HD	ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 ance Level /60 both sides ort 921
SSW495 If the second se	 Option Option Minim centre 3 layer Wall w Any ex Stud Size (mm) 90 1 layer Minim centre Option 1 layer Wall w Any ex Stud Size (mm) 90 	al intern nal wall i um 90m rs of 16n rrap ternal w width (mm) 195 approx r of 13mr um 90m rs nal wall i r of 13mr rrap ternal w Width (mm) 175 approx	nal wall lining nsulation im steel stud fram im multishield or 1 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.98 plus insulation R value* 0.98 plus insulation R value* n fireshield im steel stud fram nsulation n multishield or 13 all cladding with a Insulation Pathway R-Value (m ² K/W) 0.85 plus insulation R value*	ing at 600mm form trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 38 (35) ing at 600mm omm trurock drained and v Sound Insulation Rw (Rw + Ctr) No insulation 39 (30)	ented cavity Pink® Batts 38 n maximum ented cavity Pink® Batts 43	Fire Resista 120/12 rated from the Rep FC13 Wall R2.0HD (35) Fire Resista -/60, rated from Rep FC13 Wall R2.0HD (32)	Ance Level 0/120 e outside only ort 921 Report Day Design 3094-33 Ance Level /60 both sides ort 921 Report Insul

* R-value based on 40mm batten cavity and anti-glare foil wall wrap - does not include thermal bridging pathway. Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

4.1 Systems

EXTERNAL STEEL STUD WALLS



* R-value based on 40mm batten cavity and anti-glare foil wall wrap - does not include thermal bridging pathway. Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

1.08 plus

insulation R value*

51 (43)

210

approx

90

54 (47)

Report

Insul

SSW70	 1 layer Minim centre Optior Minim Minim 	of 10mi um 90m s al wall i um 40m um 90m	m masta shield or v m steel stud frami nsulation im air-gap im masonry with F	vater shield ng at 600mm RL 60/60/60	maximum and	Fire Resistance Level 60/60/60 rated from the outside only Report	
6	minim Stud Size	um laid v	weight 130 kg/m ²	Sound Insulation		FC13921	
	(mm)	(mm)	R-value (m ² K/W)	Rw (Rw + Ctr) No insulation	Pink [®] Batts	Wall R2.0HD	
	90	230 approx	0.37 plus insulation R value	47 (41)	58 ((47)	Report Insul
SSW373	 1 layer Minimu Option Minim Minim System d 	of 16mm of 90mm hal wall i um 40m um 90m um laid v esigned	m fire shield, multi s in steel stud framing in nsulation im air-gap im masonry with F weight 130 kg/m ² to provide fire prote	shield or tru ro at 600mm max RL 60/60/60 ection to stud (ck imum centres and not masonry)	Fire Resistance Level 60/60/60 rated from both sides Report FC13921	
	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Rw (Rw + Ctr)			
	90	236 approx	0.40 plus insulation R value	No insulation	Pink [®] Batts 59 (Wall R2.0HD (49)	Report Insul
SSW371	 2 layer Minimu Option Minim Minim Minim System d 	rs of 13n um 90mm hal wall i um 40m um 90m um laid v lesigned	nm fire shield, multi n steel stud framing a nsulation nm air-gap m masonry with F weight 130 kg/m ² to provide fire prote	ishield or tru r at 600mm max RL 60/60/60 ection to stud (ock imum centres and not masonry)	Fire Resista 90/90 rated from Rep FC13	ance Level D/90 both sides ort 921
· · · · ·	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Rw (Rw + Ctr)			
	90	246 approx	0.46 plus insulation R value	No insulation 51 (47)	Pink [®] Batts	Wall R2.0HD (53)	Report Insul
SSW374	 2 layer Minimu Option Minim Minim minim System d 	rs of 16n um 90mm nal wall i um 40m um 90m um laid n lesigned	nm fire shield, mult n steel stud framing nsulation nm air-gap m masonry with F weight 130 kg/m ² to provide fire prote	ishield or tru r at 600mm max RL 60/60/60 ection to stud (ock imum centres and not masonry)	Fire Resistance Level 120/120/120 rated from both sides Report FC13921	
	Stud Size (mm)	Width (mm)	Insulation Pathway R-Value (m ² K/W)	Sound Insulation Rw (Rw + Ctr)			
	90	242 approx	0.50 plus insulation R value	53 (49)	PINK [®] Batts	(55)	Report Insul

General Requirements

	Non-fire Rated	Fire Rated
Install control joints in plasterboard walls:		
> At 12m maximum intervals	1	1
At all control joints in the structure	•	•
> At any change in the substrate		
Jointing of multi shield is not required due to the overlying breathable wall wrap and cladding.		\checkmark
Joint the face layer on the internal side. As a minimum, use paper tape with any Siniat jointing compound applied in one or two coats to the thickness of two coats. Alternatively, use bindex fire and acoustic sealant according to the Product Data Sheet.		✓
Use approved fire rated penetration details. Fire penetrations may require fire collars or other devices to maintain fire performance. Refer to the i box below.		✓
Use approved fire rated penetration details for systems that use the internal non-fire rated plasterboard wall lining to maintain the FRL. Refer to i box below.		~
Protect plasterboard sheets from the weather when installed on the exterior side of external wall framing until the moisture barrier and exterior cladding are installed.	\checkmark	✓
Protect plasterboard from water pooling at ground level.	\checkmark	\checkmark
Use bindex fire and acoustic sealant on all gaps and around perimeter.		\checkmark
Attach all fixtures to studs or purpose installed noggings. Wall anchors must not be fixed only to the plasterboard of fire rated walls.		\checkmark

For acceptable modifications or variations to fire rated systems, refer to Section 2.3 Fire Resistance.
 Penetrations in external walls of Class 1 buildings do not need to have an FRL, refer to NCC Volume Two, Clause 3.7.1.5

Insulation products nominated in system tables are the minimum required to meet the acoustic rating. Insulation with higher R-value may be required to meet the desired system R-value.



Framing



FIGURE 1 Typical External Steel Frame Wall Layout

	Non-fire Rated	Fire Rated
Use a Deflection Head Track if soffit movement of up to 20mm is expected. For higher requirements contact Siniat. Refer to Construction Details for clearances.	\checkmark	\checkmark
Framing members as per framing table or structural design up to 600mm maximum. Refer to the Stud Spacing Charts for appropriate framing selection.	\checkmark	\checkmark
Face studs in the same direction if possible, to allow easier fastening of wall lining. However, installation of some services may require the studs to be positioned in opposite directions. Refer to Construction Details.	\checkmark	\checkmark
Twist studs into tracks and push studs down completely into bottom track.	\checkmark	~
Structural wall designs must allow for the intended dead, live and wind loads in accordance with the AS/NZS 1170 series.	\checkmark	\checkmark

Table 1 Maximum Head and Base Track Anchor Spacing

Stud Spacing (mm)	Maximum Anchor Spacing (mm)
600	600
450	600
400	600
300	450
200	300

1. Additional anchors 100mm maximum from track ends.

2. 150mm studs require 2 anchors across width.



Plumbing and electrical services must not protrude beyond the face of the studs.

Non-Load Bearing External Steel Stud Wall

Chart 1 Stud Spacing - REGION A - HEIGHT/240 - Expressed Jointed CFC / Metal Cladding



NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 67% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume[™] AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height (mm)	No. of Noggings evenly spaced
0 - 3000	1
3001 - 3300	2

Anchor Demand

Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5
 Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.

1. Brick Veneer construction requires noggings at 1200mm max centres.



NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 67% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume™ AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height (mm)	No. of Noggings evenly spaced
0 - 3000	1
3001 - 3300	2
1. Brick Veneer cons	struction requires noggings a

Anchor Demand

1. Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5 2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.

Non-Load Bearing External Steel Stud Wall

Chart 3 Stud Spacing - REGION B - HEIGHT/240 - Expressed Jointed CFC / Metal Cladding



NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 47% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume[™] AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height (mm)	No. of Noggings evenly spaced
0 - 3000	1
3001 - 3300	2

Anchor Demand

1. Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5 2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.

1. Brick Veneer construction requires noggings at 1200mm max centres.

Non-Load Bearing External Steel Stud Wall Chart 4 Stud Spacing - REGION B - HEIGHT/360 - Rendered or Tiled CFC / AAC / Brick Veneer



NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 47% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume™ AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Anchor Demand

100mm maximum from ends.

1. Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5 2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also

Nogging Table

Wall Height (mm)	No. of Noggings evenly spaced	
0 - 3000	1	
3001 - 3300	2	

1. Brick Veneer construction requires noggings at 1200mm max centres.

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NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 67% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume™ AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height	No. of Noggings
(mm)	evenly spaced
3001 - 3600	2

Brick Veneer construction requires noggings at 1200mm max centres.

Anchor Demand

Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5
 Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.



Non-Load Bearing External Steel Stud Wall Chart 6 Stud Spacing - REGION A - HEIGHT/360 - Rendered or Tiled CFC / AAC / Brick Veneer

NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 67% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume™ AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height	No. of Noggings
(mm)	evenly spaced
3001 - 3600	2

1. Brick Veneer construction requires noggings at 1200mm max centres.

Anchor Demand

1. Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5 2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.



Non-Load Bearing External Steel Stud Wall Chart 7 Stud Spacing - REGION B - HEIGHT/240 and HEIGHT/360

NOTES

1. Table based upon evenly distributed lateral pressures and the deflection limit stated. A sufficient number of cladding battens/top-hats, or brick-ties must be installed to provide an even distribution of lateral load to the stud framing.

2. Serviceability wind pressure (Ws) taken as 47% of ultimate which is suitable for buildings of Importance Level 2 to 4.

Table includes self weight and cladding weight up to 25 kg/m² only. Heavier outer linings like Masonry and AAC panels must be supported at wall base. Table not applicable to axially loaded (load bearing) studs or bracing shear walls. Point loads and other loads such as shelf loads or live loads are not considered.
 Table refers to Siniat Steel Studs of grade G300 steel with Zincalume[™] AM150 corrosion protection.

5. Calculations based upon a single span and designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.

6. Base track must be 1.15mm BMT (Base Metal Thickness). Stud must be fixed to base track with 10g screws on both sides.

7. Slotted Deflection Head Track (SDHT) must be 1.15mm BMT. Studs must be fixed through SDHT slots with 10g wafer head screws on both sides.

8. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions. Seek professional engineering advice to determine wind pressures for a specific project. 9. Contact Siniat or a structural engineer to check walls for earthquake actions or any imposed ceiling loads during an earthquake. Specific project information is required. 9. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.

Nogging Table

Wall Height	No. of Noggings
(mm)	evenly spaced
3001 - 3600	2

Brick Veneer construction requires noggings at 1200mm max centres.

Anchor Demand

1. Anchor Shear (kN) demand = Wu (kPa) x Stud Spacing (m) x Wall Height (m) x 0.5 2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and also 100mm maximum from ends.

Steel Profile Information

Material

Manufacturer	Grade	Ultimate	Jltimate Yield	
Siniat	G300	340 MPa	300 MPa	AM150

1. Steel grade and coating in accordance with AS 1397 Continuous hot-dip metallic coated steel sheet and strip



Section Properties

Profile	Dimensions (mm)		Shear Centre from Centroid (mm)	Area (mm²)	MomentSectionof InertiaModulus(mm4)(mm3)		Torsion Constant J (mm⁴)	Warping Constant Iw (mm ⁶)		
	Depth	BMT	Xo		lxx	lyy	Zxx	Zyy		
Chud	92	1.15	-24.7	194.7	251,300	30,770	5,548	1,199	85.8	48,940,000
5100	150	1.15	-20.0	262.1	808,500	35,850	10,880	1,296	115.6	150,300,000
Track	92	1.15	-15.6	172.6	220,300	13,780	4,714	583	76.1	21,050,000
Hack	150	1.15	-12.9	241.5	718,500	16,890	9,491	649	106.5	71,610,000
	92	1.15	-30.7	215.3	314,200	51,950	6,714	1,457	94.9	78,040,000
	150	1.15	-25.4	280.8	937,400	59,520	12,450	1,546	123.8	238,600,000

Plasterboard Layout

	Non-fire Rated	Fire Rated
For single layer systems, vertical joints must be 200mm minimum from the edge of any opening such as windows and doorways to minimise cracking at the joints.	\checkmark	~
Horizontal Layout		
Stagger butt joints in single layer systems by 300mm minimum on adjoining sheets and on opposite sides of the wall.	\checkmark	\checkmark
Stagger butt joints in multilayer systems by 300mm minimum on adjoining sheets and between layers.	\checkmark	\checkmark
First layer butt joints must be backed by a stud or back-blocked. Refer to installation diagrams.	\checkmark	\checkmark
Stagger recessed edges by 300mm minimum between layers.	\checkmark	\checkmark
Stagger recessed edges in single layer systems by 300mm minimum on opposite sides of the wall or alternatively, back by a nogging.		\checkmark
Vertical Layout		
Stagger butt joints in single layer systems by 300mm minimum on adjoining sheets and on opposite sides of the wall.	\checkmark	\checkmark
Stagger butt joints by 300mm minimum on adjoining sheets and between layers.	\checkmark	\checkmark
First layer butt joints must be backed by a nogging or back-blocked.	\checkmark	
First layer butt joints must be backed by a nogging.		\checkmark
Stagger recessed edges by 300mm minimum between layers.	\checkmark	\checkmark
Stagger recessed edges by 300mm minimum on opposite sides of the wall for single layer systems	\checkmark	\checkmark

- > Install plasterboard sheets horizontally when practical to minimise stud twisting and reduce the effect of glancing light.
- > Minimise butt joints by using long sheets.



Plasterboard Fixing

	Non-fire Rated	Fire Rated
Drive screws to just below the sheet surface, taking care not to break the paper linerboard. For over-driven screws, install another screw 20mm away. Leave or remove the over-driven screw and patch.	~	✓
Laminating screws can be used to fix butt joints in the second and third layer.	\checkmark	\checkmark
Screw and Adhesive Method		
Apply masta grip Stud Adhesive after the frame is clean, dry, and free from grease, dust and other contaminants.	\checkmark	
Apply masta grip daubs 200mm minimum from screws and plasterboard edges.	\checkmark	
Screw Only Method		
Use the 'Screw Only Method' in tiled or fire rated areas. Stud adhesive is not permitted.	\checkmark	\checkmark

- The 'Screw and Adhesive Method' is recommended for non-fire rated applications. mastagrip will:
- > Minimise screw popping
- Reduce the number of screw heads that may show in glancing light
- > Assist in compensating for frame irregularities.

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

Plasterboard Thickness 1st Layer		2nd Layer	3rd Layer
10mm	6g x 25mm screw	6g x 41mm screw *	-
13mm	6g x 25mm screw	6g x 41mm screw *	7g x 57mm screw *
16mm	6g x 32mm screw	6g x 45mm screw *	8g x 65mm screw *

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

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

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

Exterior Cladding

	Fire Rated
The following cladding sheets or planks are not considered detrimental to the FRL of the wall:	
> PERMAROCK Outdoor	
> James Hardie [™] fibre cement sheeting	
> Wood or timber	
> Steel	1
> Aluminium	•
> PVC	
> Rendered polystyrene	
Cladding fixed and supported independently of the wall.	
For class 2 to 9 buildings, also refer to NCC Volume One Section C, CP2 Spread of fire requirements.	
Fix cladding or cladding top hats to the steel frame through the multi shield.	\checkmark
Extend the external fire rated wall up to the non-combustible roof covering or non- combustible eaves lining. Refer to Construction Details.	\checkmark

> Protect plasterboard sheets from the weather when installed on the exterior side of external wall framing until the moisture barrier and exterior cladding are installed.

- > Exterior cladding and the moisture barrier once installed, must provide protection from the weather.
- > Use construction techniques that direct condensation and rain away from plasterboard.
- Siniat recommends a drained cavity between the external cladding and the multishield for weathertightness and durability.
- > Top hats between external cladding and external plasterboard do not change the FRL of the system.
- Horizontal and vertical top hats are shown in system images as an option to provide a drained and vented cavity as well as meet the NCC thermal break requirements. Alternatively, use a thermal break strip with insulated value R0.2 between the steel stud framing and external cladding.





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FIGURE 3 Fire Rated 2 Layers - Horizontal + Horizontal

Screw Only Method







Screw Only Method



Details

4.1

Non-Fire Rated Head and Base Details for External Steel Stud Walls





Non-Fire Rated Typical Head and Base Details for Non-Load Bearing External Steel Stud Walls



With cladding over thermal break Section

FIGURE 14 External Steel Stud Wall Base With cladding over horizontal top-hats Section 4.1 Details



With cladding over horizontal + vertical Top Hats Section



Fire Rated

COLLIQUONE OULO





Non-load bearing walls are unsuitable for bracing wall applications





With horizontal Top Hats under AAC

With brick veneer Section

> Brick veneer ties must be compatible with Zincalume steel. Stainless steel brick ties and other more noble metals must be electrically isolated from the steel studs.

Section





Plan

Fire Rated Typical Details for Spandrel Walls