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5.3 Steel Stud Ceilings

The ceilings in this section are constructed using steel studs as the ceiling joists.

Common applications for these ceilings include corridors, above stairwells, and under concrete floors.

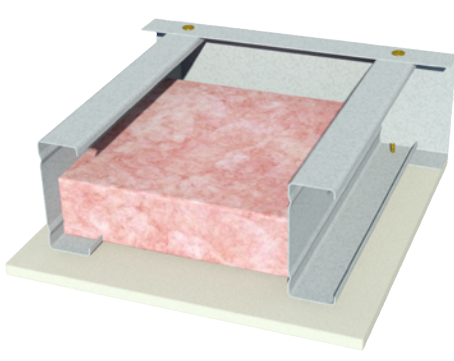
This section contains systems for fire rated ceilings, including fire rated from above only, and fire rated from above and below. If access is from below only, and the ceiling is required to be fire rated from above, an alternative system is a the Shaft Wall Ceiling, refer to Section 5.4.

For acoustic ceiling systems using steel stud framing to control soil and waste pipe noise, refer to Section 6.1.

For additional information of ceiling installation, refer to Section 5.1.



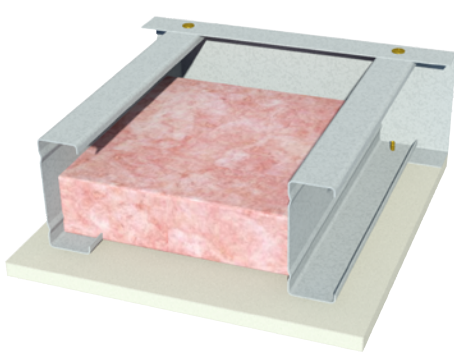
SSC102



- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 10mm **spanshield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-35
64	74	28 (24)	31 (27)	
76	86			
92	102			
150	160			

SSC104

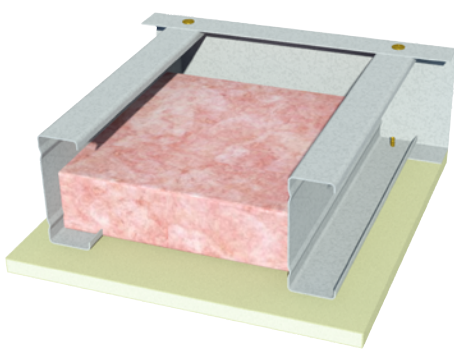


- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 13mm **mastashield**

mastashield can be substituted with **watershield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-35
64	77	29 (25)	32 (28)	
76	89			
92	105			
150	163			

SSC108



- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 13mm **soundshield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-35
64	77	30 (27)	33 (30)	
76	89			
92	105			
150	163			

SSC2



- [Above] 2 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 2 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 Insul v8
64	128	47 (38)	50 (42)	
76	140	48 (39)	50 (43)	
92	156	49 (42)	55 (49)	
150	214	51 (44)	55 (51)	

Fire Resistance Level
120/120/120
 rated from above
90/90/90
 rated from below
 Report FC14332



SSC3



- [Above] 2 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 3 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		Report Day Design 3094-23 Insul v8
		No insulation	Pink® Partition 50mm 11kg/m ³	
64	144	50 (41)	52 (45)	
76	156	50 (41)	52 (46)	
92	172	52 (45)	57 (52)	
150	230	54 (47)	57 (53)	

Fire Resistance Level
120/120/120
rated from above and below
Report FC14332

SSC4



- [Above] 1 layer of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 10mm **mastashield**

fireshield can be substituted with **multishield**
mastashield can be substituted with **watershield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		Report Insul v8
		No insulation	Pink® Partition 50mm 11kg/m ³	
64	90	37 (28)	40 (31)	
76	102	37 (29)	41 (31)	
92	118	38 (28)	42 (31)	
150	176	40 (30)	45 (35)	

Fire Resistance Level
60/60/60
rated from above only
Report FC14332

SSC6



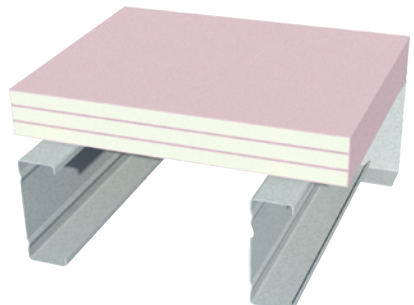
- [Above] 2 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		Report Day Design 3094-23
		No insulation		
64	96	35 (32)		
76	108			
92	124			
150	182			

Fire Resistance Level
60/60/60
rated from above only
Report FC14332

SSC7



- [Above] 3 layers of 13mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres

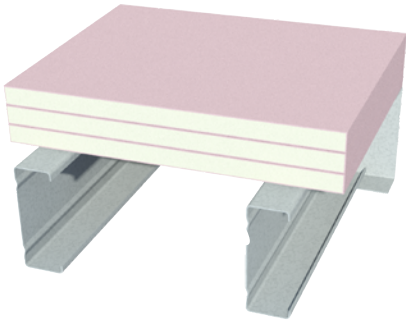
fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)		Report Day Design 3094-23
		No insulation		
64	103	37 (35)		
76	115			
92	131			
150	189			

Fire Resistance Level
90/90/90
rated from above only
Report FC14332



SSC8



- [Above] 3 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres

Fire Resistance Level
120/120/120
rated from above only
Report FC14332

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)	
		No insulation	
64	112	38 (36)	
76	124		
92	140		
150	198		

Report
Day Design
3094-23

SSC9



- [Above] 2 layers of 13mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 10mm **mastashield**

Fire Resistance Level
90/90/90
rated from above only
Report FC14332

fireshield can be substituted with **multishield**
mastashield can be substituted with **watershield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)	
		No insulation	Pink® Partition 50mm 11kg/m³
64	100	40 (31)	44 (34)
76	112	41 (31)	44 (34)
92	128	42 (31)	47 (35)
150	186	44 (34)	49 (39)

Report
Insul v8

SSC10



- [Above] 2 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 1 layer of 16mm **fireshield**

Fire Resistance Level
120/120/120
rated from above only
Report FC14332

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)	
		No insulation	Pink® Partition 50mm 11kg/m³
64	112	43 (32)	46 (37)
76	124	44 (33)	47 (38)
92	140	44 (35)	48 (40)
150	198	46 (38)	49 (43)

Report
Insul v8

SSC11



- [Above] 1 layers of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 2 layer of 13mm **fireshield**

Fire Resistance Level
60/60/60
rated from above and below
Report FC14332

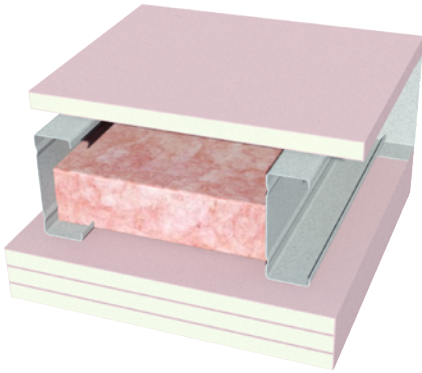
fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres Rw (Rw + Ctr)	
		No insulation	Pink® Partition 50mm 11kg/m³
64	106	43 (31)	46 (36)
76	118	43 (32)	46 (37)
92	134	44 (35)	48 (40)
150	192	46 (38)	49 (43)

Report
Insul v8



SSC12



- [Above] 1 layer of 16mm **fireshield**
- Minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 3 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 Insul v8
64	128	46 (35)	49 (40)	
76	140	47 (36)	49 (41)	
92	156	48 (39)	51 (43)	
150	214	49 (42)	53 (46)	

Fire Resistance Level
60/60/60
rated from above
120/120/120
rated from below
Report FC14332

SSC200



- Minimum 140mm cavity with minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 2 layers of 13mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 INSUL v9
64	96	34 (31)	39 (35)	
76	108			
92	124			
150	182			

Fire Resistance Level
30/30/30
rated from below only
Report FC14332

SSC201



- Minimum 140mm cavity with minimum 64mm steel stud framing at maximum **600mm** centres
- [Below] 2 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 INSUL v9
64	96	35 (32)	40 (37)	
76	108			
92	124			
150	182			

Fire Resistance Level
30/30/30
rated from below only
Report FC14332

SSC202



- Minimum 140mm cavity with minimum 64mm steel stud framing at maximum **450mm** centres
- [Below] 2 layers of 16mm **fireshield**

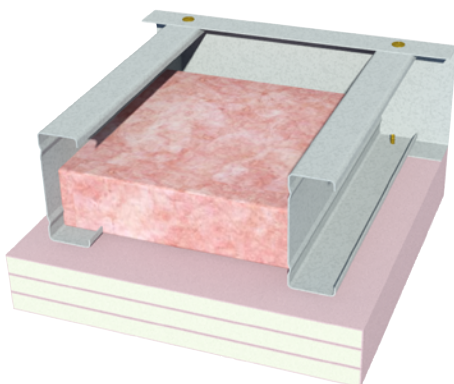
fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		Rw (Rw + Ctr)		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 INSUL v9
64	96	35 (32)	40 (37)	
76	108			
92	124			
150	182			

Fire Resistance Level
60/60/60
rated from below only
Report FC14332



SSC203



- Minimum 140mm cavity with minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 3 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report Day Design 3094-23 INSUL v9
64	112	38 (36)	43 (40)	
76	124			
92	140			
150	198			

Fire Resistance Level
90/90/90
rated from below only
Report FC14332

SSC204



- Minimum 140mm cavity with minimum 64mm steel stud framing at maximum 450mm centres
- [Below] 4 layers of 16mm **fireshield**

fireshield can be substituted with **multishield**

Stud Depth (mm)	Ceiling Thickness (mm)	Sound Insulation for studs at 450mm centres		
		No insulation	Pink® Partition 50mm 11kg/m ³	Report INSUL v9
64	128	41 (39)	46 (43)	
76	140			
92	156			
150	214			

Fire Resistance Level
120/120/120
rated from below only
Report FC14332



General Requirements

	Non-Fire Rated	Fire Rated
Install control joints in plasterboard ceilings: <ul style="list-style-type: none"> > At 12m maximum intervals > At all control joints in the structure > At any change in the substrate > At the junction of a larger room and passageway. 	✓	✓
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 for plasterboard spanning 600mm framing centres.	✓	✓
Limit dead loads on plasterboard ceilings to 2.5 kg/m ² for plasterboard spanning 450mm framing centres where the plasterboard can usually span 600mm centres.	✓	✓
Only joint the face layer. As a minimum, use paper tape with either mastabase or mastalongset .		✓
Use approved fire rated penetration details. Fire penetrations may require fire collars or other devices to maintain fire performance.		✓
Use bindex fire and acoustic sealant on all gaps and around perimeter.		✓
Attach ceiling fixtures to framing members only. Ensure the framing is designed to carry any additional load.	✓	✓
All structures supporting fire rated ceilings must have an equal or greater FRL than the ceiling they support eg, a ceiling with FRL of 90/90/90 must be supported by a load bearing wall or column with FRL of at least 90 minutes.		✓



> Structural beams enclosed by a fire rated ceiling are given the same structural protection rating as the ceiling eg, a structural beam located above a ceiling rated to FRL 90/90/90 would have FRL of 90/-/-.

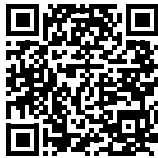
- > The FRL and RISF will not be reduced if a fire rated ceiling is built on an angle eg, a raked ceiling.
- > Consider the corrosive effect of sea spray on steel components, select framing and fasteners accordingly.
- > The FRL will not be reduced if the insulation directly above plasterboard is omitted.
- > Plasterboard installations in close proximity to metal roofs (ie: raked ceiling or with small ceiling cavities) require smaller control joint intervals as they are exposed to larger rates of thermal expansion.
- > Excessive vibration of the ceiling (by installing ceiling services, etc) is known to cause joint cracking and joint peaking.
- > Locate ceiling services so they do not cut through ceiling framing members, otherwise some degradation of the ceiling can be expected.



Framing

	Non-Fire Rated	Fire Rated
Framing members as per framing table or structural design up to 600mm maximum.	✓	✓
For a specific project, determine the relevant wind pressure load on an internal ceiling from Section 2.3, or the QR link below. Wind pressure loads must be considered for internal ceilings to comply with <i>AS/NZS 1170.2 Wind Actions</i> and <i>AS/NZS 2785 Suspended Ceilings - Design and Installation</i> .	✓	✓
Stagger joins in adjacent Top Cross Rails and Furring Channels by 1200mm	✓	✓
Install additional framing members around openings.	✓	✓

Siniat Internal Wind Load Calculator



Refer to Section 2.3 for assistance determining the relevant internal wind pressures for a specific project. Or use the Siniat Internal Wind Load Calculator by clicking on the link or by using your phone's camera on the QR code.

Table 1 Maximum Perimeter Track Anchor Spacing

Ceiling Framing Member Spacing (mm)	Maximum Anchor Spacing (mm)
600	600
450	600
400	600
300	450

1. Additional anchors 100mm maximum from track ends.
2. 150mm tracks require 2 anchors across width.

Table 2 Maximum Span (Framing Spacing) for Plasterboard

Plasterboard Type	General Internal Areas	Areas of Intermittent High Humidity eg. Unventilated Bathrooms, Basements and External Ceilings
10mm mastashield	450mm	300mm
13mm mastashield	600mm	450mm
10mm spanshield	600mm	450mm
10mm opal	600mm	450mm
10mm and 13mm soundshield	600mm	450mm
10mm and 13mm watershield	600mm	450mm
13mm and 16mm fireshield	600mm	450mm
13mm and 16mm multishield	600mm	450mm
13mm and 16mm trurock	600mm	450mm
13mm and 16mm trurock hd	600mm	450mm



Fire Rated and Non-Fire Rated Stud Ceiling End Connections

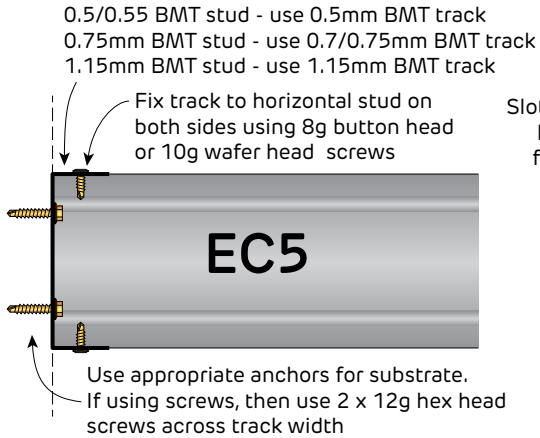


FIGURE 1 Fixed End Connection EC5
Section

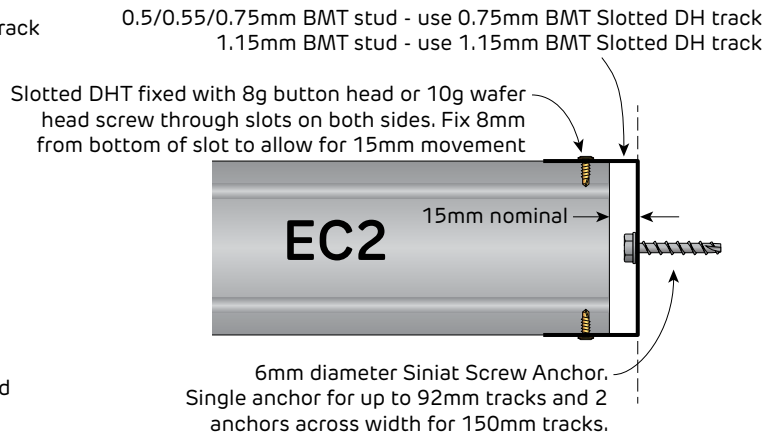


FIGURE 2 Sliding End Connection EC2
Section

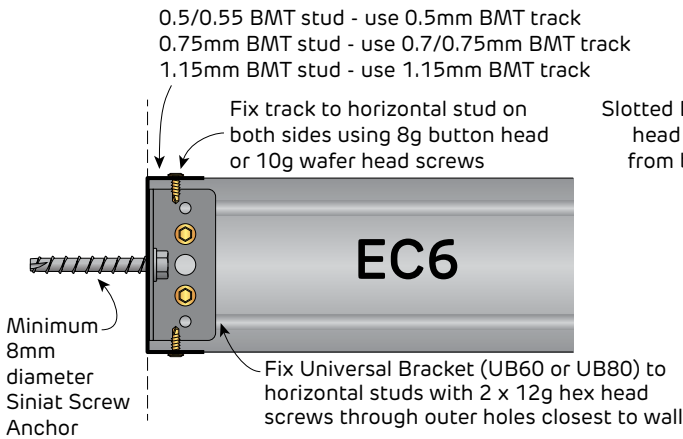


FIGURE 3 Fixed End Connection EC6
92mm or 150mm studs only
Section

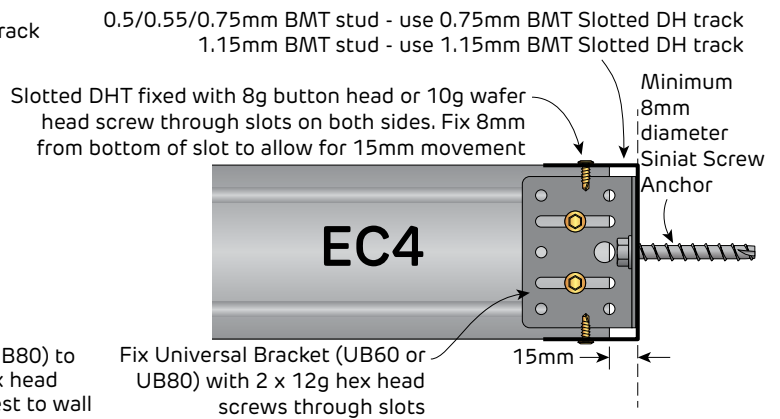


FIGURE 4 Sliding End Connection EC4
92mm or 150mm studs only
Section

Siniat Internal Wind Load Calculator



Refer to Section 2.3 for assistance determining the relevant internal wind pressures for a specific project. Or use the Siniat Internal Wind Load Calculator by clicking on the link or by using your phone's camera on the QR code.


Table 1 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only			Up to BCA Building Importance Level 3		Ultimate pressure W_U (kPa)		0.39		
					Serviceability pressure W_S (kPa)		0.25		
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1x10mm	2x10mm	1x13mm	2x13mm	3x13mm	1x16mm	2x16mm	3x16mm
64 x 0.5	600	2110	1960	2030	1860	1730	2020	1840	1710
	450	2320	2160	2240	2040	1900	2220	2030	1880
	400	2410	2250	2330	2130	1980	2310	2110	1960
	300	2650	2470	2560	2340	2180	2550	2320	2160
64 x 0.75	600	2400	2240	2320	2120	1970	2310	2100	1950
	450	2640	2460	2550	2330	2170	2540	2310	2150
	400	2750	2560	2660	2420	2260	2640	2400	2230
64 x 1.15	600	3030	2820	2920	2670	2490	2910	2650	2460
	450	2770	2580	2670	2440	2270	2660	2420	2250
	400	3050	2840	2940	2690	2500	2920	2660	2470
76 x 0.55	600	3170	2950	3060	2790	2600	3040	2770	2570
	450	3490	3250	3370	3070	2860	3350	3050	2830
	300	2490	2310	2400	2190	2040	2390	2170	2020
76 x 0.75	600	2790	2590	2690	2460	2290	2670	2430	2260
	450	3070	2860	2960	2700	2520	2940	2680	2490
	400	3190	2970	3080	2810	2620	3060	2790	2590
76 x 1.15	600	3510	3270	3390	3100	2880	3370	3070	2850
	450	3180	2960	3070	2800	2610	3050	2770	2580
	400	3500	3260	3380	3080	2870	3360	3050	2840
92 x 0.55	600	3640	3390	3510	3210	2980	3490	3180	2950
	450	4000	3730	3860	3530	3290	3840	3500	3250
	300	2900	2700	2800	2550	2180	2780	2530	2110
92 x 0.75	600	3190	2970	3080	2810	2620	3060	2790	2590
	450	3320	3090	3200	2920	2720	3180	2900	2690
	300	3650	3400	3530	3220	3000	3510	3190	2970
92 x 1.15	600	3200	2980	3090	2820	2630	3070	2800	2600
	450	3520	3280	3400	3110	2890	3380	3080	2860
	300	3660	3410	3540	3230	3010	3520	3200	2980
150 x 0.75	600	4030	3760	3900	3560	3310	3870	3530	3280
	450	3690	3430	3560	3250	3030	3540	3220	3000
	300	4220	3930	4080	3720	3470	4050	3690	3430
150 x 1.15	600	4560	4330	4440	4100	3820	4420	4060	3770
	450	4630	4390	4510	4170	3680	4490	4140	3580
	300	4970	4710	4840	4520	4280	4820	4490	4230
150 x 1.15	600	5120	4850	4990	4660	4420	4970	4630	4380
	450	5500	5220	5360	5010	4750	5340	4970	4710
	300	5140	4870	5010	4680	4440	4990	4650	4400
150 x 1.15	600	5530	5240	5380	5030	4770	5360	4990	4730
	450	5690	5400	5540	5180	4910	5520	5140	4870
	300	6120	5800	5960	5570	5280	5930	5530	5230

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

- Maximum anchor shear and tension demand = 1.32 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

- End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + W_u (suction) + $Q_{0.03kPa}$ Service Load
Ultimate Load Case 2: 0.9G + W_u (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + W_s with deflection limited to span/360 or 12mm.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 2 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only			Up to BCA Building Importance Level 3		Ultimate pressure W_U (kPa)		0.54		
					Serviceability pressure W_S (kPa)		0.35		
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1x10mm	2x10mm	1x13mm	2x13mm	3x13mm	1x16mm	2x16mm	3x16mm
64 x 0.5	600	1940	1830	1880	1750	1630	1880	1740	1600
	450	2130	2020	2070	1930	1810	2070	1910	1800
	400	2220	2100	2160	2000	1890	2150	1990	1870
	300	2440	2310	2380	2210	2080	2360	2190	2060
64 x 0.75	600	2210	2090	2150	2000	1880	2140	1980	1860
	450	2430	2300	2370	2200	2070	2360	2180	2050
	400	2530	2390	2460	2290	2150	2450	2270	2130
	300	2790	2630	2710	2520	2370	2700	2500	2350
64 x 1.15	600	2550	2410	2480	2300	2160	2470	2280	2140
	450	2800	2650	2730	2530	2380	2710	2510	2360
	400	2920	2750	2840	2630	2480	2820	2610	2450
	300	3210	3030	3120	2900	2730	3110	2880	2700
76 x 0.55	600	2290	2160	2220	2070	1860	2210	2050	1820
	450	2520	2380	2450	2270	2140	2440	2260	2120
	400	2620	2470	2550	2360	2230	2540	2350	2200
	300	2880	2720	2800	2600	2450	2790	2580	2430
76 x 0.75	600	2560	2420	2490	2320	2180	2480	2300	2160
	450	2820	2670	2750	2550	2400	2730	2530	2380
	400	2940	2770	2860	2650	2490	2840	2630	2470
	300	3230	3050	3140	2920	2750	3130	2900	2720
76 x 1.15	600	2920	2760	2840	2640	2480	2830	2620	2460
	450	3220	3040	3130	2910	2730	3110	2880	2710
	400	3350	3160	3250	3020	2840	3240	3000	2820
	300	3680	3480	3580	3330	3130	3570	3300	3100
92 x 0.55	600	2670	2430	2590	2170	1860	2570	2130	1820
	450	2930	2770	2860	2650	2480	2840	2630	2420
	400	3050	2880	2970	2760	2590	2960	2740	2570
	300	3360	3180	3270	3030	2860	3250	3010	2830
92 x 0.75	600	2950	2780	2870	2660	2500	2850	2640	2480
	450	3240	3060	3150	2930	2760	3140	2910	2730
	400	3370	3190	3280	3050	2870	3270	3020	2840
	300	3710	3510	3610	3350	3160	3590	3330	3130
92 x 1.15	600	3390	3210	3300	3060	2880	3290	3040	2860
	450	3740	3530	3630	3370	3170	3620	3350	3150
	400	3890	3670	3780	3510	3300	3760	3480	3270
	300	4280	4040	4160	3860	3640	4140	3830	3600
150 x 0.75	600	4350	4100	4240	3670	3150	4220	3600	3070
	450	4670	4480	4580	4330	4080	4560	4300	4040
	400	4810	4610	4710	4460	4240	4700	4430	4200
	300	5170	4950	5060	4790	4580	5050	4760	4540
150 x 1.15	600	4830	4630	4730	4480	4260	4720	4450	4220
	450	5190	4980	5090	4810	4600	5070	4780	4560
	400	5350	5120	5240	4950	4730	5220	4930	4700
	300	5750	5510	5630	5320	5090	5610	5290	5050

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

1. Maximum anchor shear and tension demand = 1.48 kN
2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
3. 150mm tracks require 2 anchors across width.

1. End Connection 1 is Sliding type EC2. End Connection 2 is Fixed type EC5. Refer to Stud Ceiling End Connections for end connection details including track BMT.
2. Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
3. Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
4. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
5. Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
6. Designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.
7. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions.
8. Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
9. Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm.
10. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.


Table 3 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only			Up to BCA Building Importance Level 3		Ultimate pressure W_U (kPa)		0.59		
					Serviceability pressure W_S (kPa)		0.25		
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1x10mm	2x10mm	1x13mm	2x13mm	3x13mm	1x16mm	2x16mm	3x16mm
64 x 0.5	600	2110	1830	2030	1770	1560	2020	1760	1520
	450	2320	2160	2240	2040	1850	2220	2030	1840
	400	2410	2250	2330	2130	1920	2310	2110	1900
	300	2650	2470	2560	2340	2180	2550	2320	2160
64 x 0.75	600	2400	2240	2320	2120	1960	2310	2100	1950
	450	2640	2460	2550	2330	2170	2540	2310	2150
	400	2750	2560	2660	2420	2260	2640	2400	2230
64 x 1.15	600	3030	2820	2920	2670	2490	2910	2650	2460
	450	2770	2580	2670	2440	2270	2660	2420	2250
	400	3050	2840	2940	2690	2500	2920	2660	2470
76 x 0.55	600	3170	2950	3060	2790	2600	3040	2770	2570
	450	3490	3250	3370	3070	2860	3350	3050	2830
	300	2490	2280	2400	2050	1770	2390	2020	1730
76 x 0.75	600	2790	2590	2690	2460	2290	2670	2430	2260
	450	3070	2860	2960	2700	2520	2940	2680	2490
	400	3190	2970	3080	2810	2620	3060	2790	2590
76 x 1.15	600	3510	3270	3390	3100	2880	3370	3070	2850
	450	3180	2960	3070	2800	2610	3050	2770	2580
	400	3500	3260	3380	3080	2870	3360	3050	2840
92 x 0.55	600	3640	3390	3510	3210	2980	3490	3180	2950
	450	4000	3730	3860	3530	3290	3840	3500	3250
	300	2590	2280	2440	2050	1770	2410	2020	1730
92 x 0.75	600	3190	2970	3080	2740	2370	3060	2690	2310
	450	3320	3090	3200	2920	2660	3180	2900	2600
	300	3650	3400	3530	3220	3000	3510	3190	2970
92 x 1.15	600	3200	2980	3090	2820	2630	3070	2800	2600
	450	3520	3280	3400	3110	2890	3380	3080	2860
	400	3660	3410	3540	3230	3010	3520	3200	2980
150 x 0.75	600	4030	3760	3900	3560	3310	3870	3530	3280
	450	3690	3430	3560	3250	3030	3540	3220	3000
	400	4220	3930	4080	3720	3470	4050	3690	3430
150 x 1.15	600	4560	4330	4440	4100	3820	4420	4060	3770
	450	5140	4870	5010	4680	4440	4990	4650	4400
	400	5530	5240	5380	5030	4770	5360	4990	4730
150 x 1.15	600	6120	5800	5960	5570	5280	5930	5530	5230
	450	4380	3840	4120	3470	3000	4080	3410	2930
	400	4970	4710	4840	4520	4000	4820	4490	3860
150 x 1.15	600	5120	4850	4990	4660	4420	4970	4630	4380
	450	5500	5220	5360	5010	4750	5340	4970	4710
	400	5690	5400	5540	5180	4910	5520	5140	4870

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

- Maximum anchor shear and tension demand = 1.61 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

- End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + W_u (suction) + $Q_{0.03kPa}$ Service Load
Ultimate Load Case 2: 0.9G + W_u (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + W_s with deflection limited to span/360 or 12mm.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 4 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only			Up to BCA Building Importance Level 3		Ultimate pressure W_U (kPa)					0.83
					Serviceability pressure W_S (kPa)					0.35
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1x10mm	2x10mm	1x13mm	2x13mm	3x13mm	1x16mm	2x16mm	3x16mm	
64 x 0.5	600	1720	1560	1640	1440	1280	1630	1420	1250	
	450	2130	2020	2070	1800	1700	2070	1790	1670	
	400	2220	2100	2160	2000	1800	2150	1860	1790	
	300	2440	2310	2380	2210	2080	2360	2190	2060	
64 x 0.75	600	2210	2090	2150	2000	1860	2140	1910	1850	
	450	2430	2300	2370	2200	2070	2360	2180	2050	
	400	2530	2390	2460	2290	2150	2450	2270	2130	
64 x 1.15	600	2790	2630	2710	2520	2370	2700	2500	2350	
	450	2550	2410	2480	2300	2160	2470	2280	2140	
	400	2800	2650	2730	2530	2380	2710	2510	2360	
76 x 0.55	600	2920	2750	2840	2630	2480	2820	2610	2450	
	450	3210	3030	3120	2900	2730	3110	2880	2700	
	300	1940	1780	1870	1630	1450	1850	1610	1420	
76 x 0.75	600	2560	2420	2490	2320	2180	2480	2300	2160	
	450	2820	2670	2750	2550	2400	2730	2530	2380	
	400	2940	2770	2860	2650	2490	2840	2630	2470	
76 x 1.15	600	3230	3050	3140	2920	2750	3130	2900	2720	
	450	2920	2760	2840	2640	2480	2830	2620	2460	
	400	3220	3040	3130	2910	2730	3110	2880	2710	
92 x 0.55	600	3350	3160	3250	3020	2840	3240	3000	2820	
	450	3680	3480	3580	3330	3130	3570	3300	3100	
	300	1960	1780	1870	1630	1450	1850	1610	1420	
92 x 0.75	600	2610	2370	2490	2180	1940	2470	2150	1900	
	450	2940	2670	2810	2450	2180	2780	2420	2140	
	300	3360	3180	3270	3030	2860	3250	3010	2830	
92 x 1.15	600	2950	2780	2870	2660	2460	2850	2640	2410	
	450	3240	3060	3150	2930	2760	3140	2910	2730	
	300	3370	3190	3280	3050	2870	3270	3020	2840	
150 x 0.75	600	3710	3510	3610	3350	3160	3590	3330	3130	
	450	3390	3210	3300	3060	2880	3290	3040	2860	
	300	3890	3670	3780	3510	3300	3760	3480	3270	
150 x 1.15	600	4280	4040	4160	3860	3640	4140	3830	3600	
	450	3310	3000	3160	2770	2460	3140	2730	2410	
	300	4420	4010	4220	3690	3280	4180	3640	3220	
150 x 1.15	600	4700	4510	4610	4150	3690	4600	4090	3620	
	450	5170	4950	5060	4790	4320	5050	4760	4240	
	300	4830	4630	4730	4480	4260	4720	4450	4220	
150 x 1.15	600	5190	4980	5090	4810	4600	5070	4780	4560	
	450	5350	5120	5240	4950	4730	5220	4930	4700	
	300	5750	5510	5630	5320	5090	5610	5290	5050	

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

1. Maximum anchor shear and tension demand = 1.89 kN
2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
3. 150mm tracks require 2 anchors across width.

1. End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
2. Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
3. Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
4. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
5. Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
6. Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
7. Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
8. Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
9. Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + W_s with deflection limited to span/360 or 12mm.
10. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.


Table 5 2-or-more Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only				Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)		0.39
					Serviceability pressure W_S (kPa)		0.25
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1 layer up to 13 kg/m ²	Intermediate Support Demand (kN)	2 layers up to 26 kg/m ²	Intermediate Support Demand (kN)	3 layers up to 39 kg/m ²	Intermediate Support Demand (kN)
64 x 0.5	600	2030	0.91	1890	1.07	1780	1.22
	450	2190	0.74	2060	0.88	1950	1.00
	400	2260	0.68	2130	0.81	2020	0.92
	300	2430	0.55	2290	0.65	2190	0.75
64 x 0.75	600	2290	1.03	2160	1.22	2050	1.40
	450	2470	0.83	2320	0.99	2210	1.13
	400	2550	0.77	2400	0.91	2280	1.04
	300	2750	0.62	2590	0.73	2460	0.84
64 x 1.15	600	2660	1.20	2500	1.42	2370	1.62
	450	2890	0.98	2700	1.15	2570	1.32
	400	2980	0.89	2800	1.06	2650	1.21
	300	3240	0.73	3030	0.86	2870	0.98
76 x 0.55	600	2220	1.00	2090	1.19	1990	1.36
	450	2390	0.81	2250	0.96	2150	1.10
	400	2460	0.74	2320	0.88	2210	1.01
	300	2650	0.60	2500	0.71	2380	0.81
76 x 0.75	600	2520	1.13	2370	1.34	2260	1.55
	450	2710	0.91	2560	1.09	2430	1.25
	400	2800	0.84	2640	1.00	2510	1.14
	300	3020	0.68	2840	0.81	2710	0.93
76 x 1.15	600	2840	1.28	2660	1.51	2530	1.73
	450	3070	1.04	2880	1.22	2740	1.41
	400	3170	0.95	2980	1.13	2830	1.29
	300	3440	0.77	3220	0.91	3060	1.05
92 x 0.55	600	2400	1.08	2260	1.28	2130	1.46
	450	2590	0.87	2440	1.04	2330	1.20
	400	2670	0.80	2510	0.95	2400	1.09
	300	2870	0.65	2700	0.77	2580	0.88
92 x 0.75	600	2600	1.17	2450	1.39	2340	1.60
	450	2800	0.95	2640	1.12	2520	1.29
	400	2890	0.87	2720	1.03	2590	1.18
	300	3120	0.70	2930	0.83	2800	0.96
92 x 1.15	600	2990	1.35	2810	1.59	2670	1.83
	450	3240	1.09	3040	1.29	2890	1.48
	400	3340	1.00	3140	1.19	2980	1.36
	300	3620	0.81	3390	0.96	3220	1.10
150 x 0.75	600	3060	1.38	2890	1.64	2750	1.88
	450	3290	1.11	3110	1.32	2960	1.52
	400	3390	1.02	3200	1.21	3050	1.39
	300	3650	0.82	3440	0.98	3280	1.12
150 x 1.15	600	3460	1.56	3260	1.85	3100	2.12
	450	3740	1.26	3520	1.50	3350	1.72
	400	3860	1.16	3630	1.37	3450	1.57
	300	4160	0.94	3910	1.11	3720	1.27

Noggings

Spans in this table do not require noggings

End Track Anchor Demand

- Maximum anchor shear and tension demand = 0.68 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

Intermediate Support

Stud BMT	Soffit Connection (kN)						
	SC1	SC2 2x10g screws	SC2 3x10g screws	SC2 4x10g screws	SC3 2x10g screws	SC3 3x10g screws	SC3 4x10g screws
0.5	0.51	1.08	1.62	2.16	1.08	1.62	2.16
0.55	0.61	1.26	1.89	2.50	1.26	1.89	2.52
0.75	0.96	2.00	2.50	2.50	2.00	3.00	4.00
1.15	1.68	2.50	2.50	2.50	3.80	5.70	7.60

- End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + W_u (suction) + $Q_{0.03kPa}$ Service Load
Ultimate Load Case 2: 0.9G + W_u (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + W_s with deflection limited to span/360 or 12mm
- For anchors used with intermediate supports, refer to the *Siniat Anchor Product Data Sheet* on current capacity information into concrete.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 6 2-or-more Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only				Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)		0.54	
					Serviceability pressure W_S (kPa)		0.35	
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1 layer up to 13 kg/m ²	Intermediate Support Demand (kN)	2 layers up to 26 kg/m ²	Intermediate Support Demand (kN)	3 layers up to 39 kg/m ²	Intermediate Support Demand (kN)	
64 x 0.5	600	1900	1.07	1790	1.22	1700	1.35	
	450	2070	0.87	1950	0.99	1860	1.11	
	400	2130	0.80	2020	0.92	1930	1.02	
	300	2300	0.65	2190	0.74	2100	0.84	
64 x 0.75	600	2160	1.22	2060	1.40	1970	1.57	
	450	2330	0.98	2220	1.13	2130	1.27	
	400	2400	0.90	2290	1.04	2190	1.16	
	300	2590	0.73	2470	0.84	2360	0.94	
64 x 1.15	600	2500	1.41	2380	1.62	2280	1.82	
	450	2710	1.14	2570	1.31	2460	1.47	
	400	2800	1.05	2660	1.20	2540	1.35	
	300	3040	0.86	2880	0.98	2750	1.10	
76 x 0.55	600	2100	1.18	1990	1.35	1900	1.51	
	450	2250	0.95	2150	1.10	2060	1.23	
	400	2320	0.87	2210	1.00	2130	1.13	
	300	2500	0.70	2380	0.81	2290	0.91	
76 x 0.75	600	2380	1.34	2260	1.54	2170	1.73	
	450	2560	1.08	2440	1.24	2340	1.40	
	400	2640	0.99	2510	1.14	2410	1.28	
	300	2850	0.80	2710	0.92	2600	1.04	
76 x 1.15	600	2670	1.50	2540	1.73	2430	1.94	
	450	2890	1.22	2740	1.40	2630	1.57	
	400	2980	1.12	2830	1.28	2710	1.44	
	300	3230	0.91	3070	1.04	2930	1.17	
92 x 0.55	600	2260	1.27	2140	1.45	2040	1.62	
	450	2440	1.03	2330	1.19	2220	1.33	
	400	2520	0.95	2400	1.09	2300	1.22	
	300	2710	0.76	2580	0.88	2480	0.99	
92 x 0.75	600	2460	1.38	2340	1.59	2250	1.79	
	450	2650	1.12	2520	1.28	2420	1.45	
	400	2730	1.02	2600	1.18	2490	1.32	
	300	2940	0.83	2800	0.95	2690	1.07	
92 x 1.15	600	2820	1.59	2680	1.82	2570	2.05	
	450	3050	1.29	2890	1.47	2770	1.65	
	400	3140	1.18	2990	1.35	2860	1.52	
	300	3400	0.96	3230	1.10	3090	1.23	
150 x 0.75	600	2890	1.63	2760	1.88	2650	2.11	
	450	3110	1.31	2960	1.51	2850	1.70	
	400	3210	1.20	3060	1.39	2930	1.56	
	300	3450	0.97	3290	1.12	3160	1.26	
150 x 1.15	600	3270	1.84	3110	2.11	2980	2.37	
	450	3520	1.49	3350	1.71	3220	1.92	
	400	3630	1.36	3460	1.57	3320	1.76	
	300	3920	1.10	3730	1.27	3580	1.43	

Noggings

Spans in this table do not require noggings

End Track Anchor Demand

1. Maximum anchor shear and tension demand = 0.76 kN
2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
3. 150mm tracks require 2 anchors across width.

Intermediate Support

Stud BMT	Soffit Connection (kN)						
	SC1	SC2 2x10g screws	SC2 3x10g screws	SC2 4x10g screws	SC3 2x10g screws	SC3 3x10g screws	SC3 4x10g screws
0.5	0.51	1.08	1.62	2.16	1.08	1.62	2.16
0.55	0.61	1.26	1.89	2.50	1.26	1.89	2.52
0.75	0.96	2.00	2.50	2.50	2.00	3.00	4.00
1.15	1.68	2.50	2.50	2.50	3.80	5.70	7.60

1. End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
2. Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
3. Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
4. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
5. Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
6. Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
7. Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
8. Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
9. Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm
10. For anchors used with intermediate supports, refer to the *Siniat Anchor Product Data Sheet* on current capacity information into concrete.
11. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.


Table 7 2-or-more Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only				Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)		0.59
					Serviceability pressure W_S (kPa)		0.25
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1 layer up to 13 kg/m ²	Intermediate Support Demand (kN)	2 layers up to 26 kg/m ²	Intermediate Support Demand (kN)	3 layers up to 39 kg/m ²	Intermediate Support Demand (kN)
64 x 0.5	600	1860	1.12	1760	1.26	1670	1.39
	450	2030	0.91	1920	1.03	1840	1.15
	400	2100	0.84	1990	0.95	1900	1.06
	300	2260	0.68	2160	0.77	2070	0.86
64 x 0.75	600	2120	1.27	2030	1.46	1950	1.63
	450	2290	1.03	2190	1.18	2100	1.31
	400	2360	0.94	2250	1.08	2170	1.21
	300	2550	0.77	2430	0.87	2340	0.98
64 x 1.15	600	2460	1.48	2340	1.68	2250	1.88
	450	2660	1.20	2530	1.36	2430	1.52
	400	2750	1.10	2620	1.25	2510	1.40
	300	2980	0.89	2840	1.02	2720	1.13
76 x 0.55	600	2060	1.24	1960	1.41	1870	1.56
	450	2220	1.00	2120	1.14	2040	1.28
	400	2290	0.92	2180	1.04	2100	1.17
	300	2460	0.74	2350	0.84	2260	0.94
76 x 0.75	600	2340	1.40	2230	1.60	2150	1.79
	450	2520	1.13	2410	1.30	2310	1.44
	400	2600	1.04	2480	1.19	2380	1.32
	300	2800	0.84	2670	0.96	2570	1.07
76 x 1.15	600	2620	1.57	2500	1.79	2400	2.00
	450	2840	1.28	2700	1.45	2590	1.62
	400	2930	1.17	2790	1.33	2680	1.49
	300	3170	0.95	3020	1.08	2900	1.21
92 x 0.55	600	2220	1.33	2100	1.51	2010	1.68
	450	2400	1.08	2290	1.23	2190	1.37
	400	2480	0.99	2370	1.13	2270	1.26
	300	2670	0.80	2550	0.91	2450	1.02
92 x 0.75	600	2420	1.45	2310	1.66	2220	1.85
	450	2600	1.17	2490	1.34	2390	1.49
	400	2680	1.07	2560	1.22	2470	1.37
	300	2890	0.87	2760	0.99	2660	1.11
92 x 1.15	600	2770	1.66	2640	1.89	2540	2.12
	450	2990	1.35	2850	1.53	2740	1.71
	400	3090	1.24	2940	1.41	2830	1.57
	300	3340	1.00	3180	1.14	3060	1.28
150 x 0.75	600	2840	1.70	2720	1.95	2620	2.19
	450	3060	1.38	2920	1.57	2810	1.76
	400	3150	1.26	3010	1.44	2900	1.61
	300	3390	1.02	3240	1.16	3120	1.30
150 x 1.15	600	3210	1.93	3070	2.20	2950	2.46
	450	3460	1.56	3310	1.78	3180	1.99
	400	3570	1.43	3410	1.63	3280	1.82
	300	3860	1.16	3680	1.32	3530	1.47

Noggings

Spans in this table do not require noggings

End Track Anchor Demand

- Maximum anchor shear and tension demand = 0.79 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

Intermediate Support


Stud BMT	Soffit Connection (kN)						
	SC1	SC2 2x10g screws	SC2 3x10g screws	SC2 4x10g screws	SC3 2x10g screws	SC3 3x10g screws	SC3 4x10g screws
0.5	0.51	1.08	1.62	2.16	1.08	1.62	2.16
0.55	0.61	1.26	1.89	2.50	1.26	1.89	2.52
0.75	0.96	2.00	2.50	2.50	2.00	3.00	4.00
1.15	1.68	2.50	2.50	2.50	3.80	5.70	7.60

- End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + W_u (suction) + $Q_{0.03kPa}$ Service Load
Ultimate Load Case 2: 0.9G + W_u (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + W_s with deflection limited to span/360 or 12mm
- For anchors used with intermediate supports, refer to the *Siniat Anchor Product Data Sheet* on current capacity information into concrete.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 8 2-or-more Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined on the underside only				Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)		0.83	
					Serviceability pressure W_S (kPa)		0.35	
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	1 layer up to 13 kg/m ²	Intermediate Support Demand (kN)	2 layers up to 26 kg/m ²	Intermediate Support Demand (kN)	3 layers up to 39 kg/m ²	Intermediate Support Demand (kN)	
64 x 0.5	600	1710	1.33	1630	1.46	1560	1.58	
	450	1870	1.09	1790	1.20	1720	1.31	
	400	1940	1.01	1860	1.11	1790	1.21	
	300	2110	0.82	2030	0.91	1960	0.99	
64 x 0.75	600	1980	1.54	1910	1.71	1850	1.88	
	450	2140	1.25	2060	1.39	2000	1.52	
	400	2200	1.14	2130	1.27	2060	1.39	
	300	2380	0.93	2290	1.03	2220	1.13	
64 x 1.15	600	2290	1.79	2200	1.97	2130	2.16	
	450	2480	1.45	2380	1.60	2300	1.75	
	400	2560	1.33	2460	1.47	2380	1.61	
	300	2770	1.08	2670	1.20	2580	1.31	
76 x 0.55	600	1910	1.49	1830	1.64	1760	1.78	
	450	2070	1.21	2000	1.35	1930	1.47	
	400	2140	1.11	2060	1.23	2000	1.35	
	300	2300	0.90	2220	1.00	2150	1.09	
76 x 0.75	600	2190	1.71	2110	1.89	2040	2.07	
	450	2350	1.37	2270	1.53	2200	1.67	
	400	2430	1.26	2340	1.40	2270	1.53	
	300	2610	1.02	2520	1.13	2440	1.24	
76 x 1.15	600	2440	1.90	2350	2.11	2280	2.31	
	450	2640	1.54	2540	1.71	2460	1.87	
	400	2730	1.42	2630	1.57	2540	1.72	
	300	2950	1.15	2840	1.27	2750	1.39	
92 x 0.55	600	2050	1.60	1970	1.77	1780	1.80	
	450	2240	1.31	2150	1.45	2070	1.57	
	400	2320	1.21	2220	1.33	2140	1.45	
	300	2490	0.97	2410	1.08	2330	1.18	
92 x 0.75	600	2260	1.76	2180	1.96	2110	2.14	
	450	2430	1.42	2350	1.58	2270	1.73	
	400	2510	1.31	2420	1.45	2340	1.58	
	300	2700	1.05	2610	1.17	2520	1.28	
92 x 1.15	600	2580	2.01	2490	2.23	2410	2.44	
	450	2790	1.63	2690	1.81	2600	1.98	
	400	2880	1.50	2770	1.66	2680	1.81	
	300	3110	1.21	3000	1.35	2900	1.47	
150 x 0.75	600	2660	2.07	2560	2.30	2470	2.50	
	450	2860	1.67	2760	1.86	2680	2.04	
	400	2950	1.53	2850	1.70	2760	1.87	
	300	3170	1.24	3060	1.37	2970	1.51	
150 x 1.15	600	3000	2.34	2890	2.59	2800	2.84	
	450	3230	1.89	3120	2.10	3020	2.30	
	400	3340	1.74	3220	1.93	3110	2.10	
	300	3600	1.40	3470	1.56	3360	1.70	

Noggings

Spans in this table do not require noggings

End Track Anchor Demand

1. Maximum anchor shear and tension demand = 0.91 kN
2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
3. 150mm tracks require 2 anchors across width.

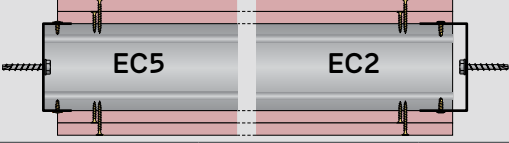
Intermediate Support

Stud BMT	Soffit Connection (kN)						
	SC1	SC2 2x10g screws	SC2 3x10g screws	SC2 4x10g screws	SC3 2x10g screws	SC3 3x10g screws	SC3 4x10g screws
0.5	0.51	1.08	1.62	2.16	1.08	1.62	2.16
0.55	0.61	1.26	1.89	2.50	1.26	1.89	2.52
0.75	0.96	2.00	2.50	2.50	2.00	3.00	4.00
1.15	1.68	2.50	2.50	2.50	3.80	5.70	7.60

1. End Connection 1 is Sliding type EC2. End Connection 2 is Fixed type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
2. Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
3. Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
4. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
5. Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
6. Designed in accordance with AS/NZS 4600:2018 Cold Formed Steel Structures.
7. Wind pressures determined in accordance with AS/NZS 1170.2 Wind Actions.
8. Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
9. Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm
10. For anchors used with intermediate supports, refer to the *Siniat Anchor Product Data Sheet* on current capacity information into concrete.
11. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.


Table 9 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined above and below			Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.54
				Serviceability pressure W_S (kPa)	0.35
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	System Number			
		SSC4	SSC9, SSC10, SSC11	SSC2, SSC12	SSC3
64 x 0.5	450	2260	2070	1860	1640
	400	2360	2160	2020	1850
	300	2650	2410	2260	2130
64 x 0.75	450	2520	2300	2160	2050
	400	2630	2400	2260	2140
	300	2940	2670	2510	2380
64 x 1.15	450	2840	2590	2440	2320
	400	2970	2710	2550	2420
	300	3300	3010	2830	2690
76 x 0.55	450	2680	2420	2110	1870
	400	2810	2550	2380	2110
	300	3140	2850	2670	2530
76 x 0.75	450	2940	2680	2520	2390
	400	3080	2800	2630	2490
	300	3440	3120	2930	2780
76 x 1.15	450	3290	2990	2820	2670
	400	3430	3130	2940	2790
	300	3820	3480	3270	3100
92 x 0.55	450	3020	2420	2110	1870
	400	3330	2730	2380	2110
	300	3730	3380	3160	2810
92 x 0.75	450	3440	3120	2930	2770
	400	3600	3270	3060	2900
	300	4020	3640	3420	3230
92 x 1.15	450	3870	3510	3300	3130
	400	4040	3670	3450	3270
	300	4430	4080	3830	3630
150 x 0.75	450	5020	4100	3570	3160
	400	5180	4610	4020	3560
	300	5560	5180	4700	4170
150 x 1.15	450	5420	5050	4830	4640
	400	5580	5200	4980	4790
	300	5980	5590	5350	5150

*Greater span possible using Sliding type EC4 end connection. Contact Siniat if required.

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

- Maximum anchor shear and tension demand = 1.64 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

- End Connection 1 is Sliding type EC2. End Connection 2 is Fixed type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zincolume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0,03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 10 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Steel stud ceiling lined above and below			Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.83
				Serviceability pressure W_S (kPa)	0.35
Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	System Number			
		SSC4	SSC9, SSC10, SSC11	SSC2, SSC12	SSC3
64 x 0.5	450	1980	1670	1500	1360
	400	2140	1880	1690	1530
	300	2470	2270	2150	2040
64 x 0.75	450	2520	2300	2160	2050
	400	2630	2400	2260	2140
	300	2940	2670	2510	2380
64 x 1.15	450	2840	2590	2440	2320
	400	2970	2710	2550	2420
	300	3300	3010	2830	2690
76 x 0.55	450	2250	1900	1700	1540
	400	2500	2140	1920	1740
	300	2880	2650	2510	2320
76 x 0.75	450	2940	2680	2520	2390
	400	3080	2800	2630	2490
	300	3440	3120	2930	2780
76 x 1.15	450	3290	2990	2820	2670
	400	3430	3130	2940	2790
	300	3820	3480	3270	3100
92 x 0.55	450	2250	1900	1700	1540
	400	2540	2140	1920	1740
	300	3350	2850	2560	2320
92 x 0.75	450	3390	3120	2880	2610
	400	3600	3270	3060	2900
	300	4020	3640	3420	3230
92 x 1.15	450	3870	3510	3300	3130
	400	4040	3670	3450	3270
	300	4430	4080	3830	3630
150 x 0.75	450	3810	3220	2880	2610
	400	4290	3620	3240	2940
	300	5020	4240	3800	3440
150 x 1.15	450	5420	5050	4830	4640
	400	5580	5200	4980	4790
	300	5980	5590	5350	5150

*Greater span possible using Sliding type EC4 end connection. Contact Siniat if required.

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

- Maximum anchor shear and tension demand = 1.64 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

- End Connection 1 is Sliding type EC2. End Connection 2 is Fixed type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with AS/NZS 4600:2018 *Cold Formed Steel Structures*.
- Wind pressures determined in accordance with AS/NZS 1170.2 *Wind Actions*.
- Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0,03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.


Table 11 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION A

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	System Number		
		SSC6	SSC7	SSC8
64 x 0.5	450	1910	1860	1800
	400	1990	1930	1870
	300	2190	2130	2060
64 x 0.75	450	2180	2120	2050
	400	2270	2210	2130
	300	2500	2430	2350
64 x 1.15	450	2510	2440	2360
	400	2610	2540	2450
	300	2880	2800	2700
76 x 0.55	450	2260	2190	2120
	400	2350	2280	2200
	300	2580	2510	2430
76 x 0.75	450	2530	2460	2380
	400	2630	2560	2470
	300	2900	2820	2720
76 x 1.15	450	2880	2800	2710
	400	3000	2920	2820
	300	3300	3210	3100
92 x 0.55	450	2630	2560	2420
	400	2740	2660	2570
	300	3010	2930	2830
92 x 0.75	450	2910	2830	2730
	400	3020	2940	2840
	300	3330	3240	3130
92 x 1.15	450	3350	3260	3150
	400	3480	3390	3270
	300	3830	3730	3600
150 x 0.75	450	4110	4030	3920
	400	4260	4170	4060
	300	4650	4550	4430
150 x 1.15	450	4780	4680	4560
	400	4930	4820	4700
	300	5290	5180	5050

 *Greater span possible using **Sliding** type EC4 end connection. Contact Siniat if required.

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

- Maximum anchor shear and tension demand = 1.33 kN
- Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
- 150mm tracks require 2 anchors across width.

- End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
- Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
- Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
- Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
- Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
- Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*.
- Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
- Ultimate Load Case 1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
- Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm.
- The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Table 12 Single Span Internal Steel Stud Ceiling Span Table (mm) - REGION B

Refer to Blueprint Section 2.3 for assistance determining the relevant wind pressures for a specific project.

Ceiling Stud Depth and BMT (mm)	Maximum Ceiling Stud Centres (mm)	System Number		
		SSC6	SSC7	SSC8
64 x 0.5	450	1790	1760	1670
	400	1860	1830	1790
	300	2030	2000	2060
64 x 0.75	450	2180	2120	2000
	400	2270	2210	2130
	300	2500	2430	2350
64 x 1.15	450	2510	2440	2360
	400	2610	2540	2450
	300	2880	2800	2700
76 x 0.55	450	2150	2040	1900
	400	2350	2280	2140
	300	2580	2510	2430
76 x 0.75	450	2530	2460	2380
	400	2630	2560	2470
	300	2900	2820	2720
76 x 1.15	450	2880	2800	2710
	400	3000	2920	2820
	300	3300	3210	3100
92 x 0.55	450	2150	2040	1900
	400	2420	2290	2140
	300	3010	2930	2830
92 x 0.75	450	2910	2830	2730
	400	3020	2940	2840
	300	3330	3240	3130
92 x 1.15	450	3350	3260	3150
	400	3480	3390	3270
	300	3830	3730	3600
150 x 0.75	450	3640	3450	3220
	400	3910	3850	3620
	300	4280	4210	4120
150 x 1.15	450	4520	4450	4380
	400	4650	4590	4510
	300	5010	4940	4860

*Greater span possible using **Sliding** type EC4 end connection. Contact Siniat if required.

Nogging Table

Ceiling Span (m)	Number of Noggings evenly spaced along ceiling joist
0 - 2.0	0
2.0 - 4.0	1
above 4.0	2

End Track Anchor Demand

1. Maximum anchor shear and tension demand = 1.33 kN
2. Anchors at maximum 1.5 x stud spacing up to 600mm maximum, and 100mm maximum from ends.
3. 150mm tracks require 2 anchors across width.

1. End Connection 1 is **Sliding** type EC2. End Connection 2 is **Fixed** type EC5. Refer to *Stud Ceiling End Connections* for end connection details including track BMT.
2. Table based upon downward (suction) and upward (uplift) pressures, for internal use only.
3. Table includes self weight and 2 kg/m² insulation weight with an additional 3 kg/m² service load. No further allowance for additional point loads or live loads.
4. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
5. Table refers to Siniat steel studs of grade G300 steel with Zinalume™ AM150 or AM125 corrosion protection. Maximum production lengths available are 7.2m
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*.
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Load Case1: 1.2G + Wu (suction) + Q_{0.03kPa} Service Load
Ultimate Load Case 2: 0.9G + Wu (uplift).
9. Serviceability Load Case 1: G with deflection limited to span/500
Serviceability Load Case 2: G + Ws with deflection limited to span/360 or 12mm.
10. The nominated lateral pressures and deflection limits must be checked for suitability for a specific project.



Plasterboard Layout

	Non-Fire Rated	Fire Rated
Sheet ceilings perpendicular to framing members.	✓	✓
Stagger face layer butt joints by 600mm minimum on adjoining sheets and between layers.	✓	✓
Stagger recessed edges by 300mm minimum between layers.	✓	✓
Follow the back-blocking requirements and butt joint placement for the level of finish selected. [Refer To Section 7]	✓	

i > Sheet ceilings parallel to the light source to reduce the effect of glancing light.

- > Minimise butt joints by using the longest sheet possible.
- > Butt joints on underlying layers (not face layer) may be made on the same framing member.
- > For 2 layer systems at 450mm centres, face layer butt joints may be fixed to framing members.

Plasterboard Fixing

	Non-Fire Rated	Fire Rated
For the installation of plasterboard to studs joists, refer to Section 5.1.	✓	✓
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.	✓	✓
Use laminating screws to fix floating butt joints in the second and third layer.	✓	✓
Screw and Adhesive Method		
Apply mastagrip Stud Adhesive after the frame is clean, dry, and free from grease, dust and other contaminants.	✓	
Apply mastagrip daubs 200mm minimum from screws and plasterboard edges.	✓	
Screw Only Method		
Use the 'Screw Only Method' for fire rated ceilings. Stud adhesive is not permitted.	✓	✓

i 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	4th Layer
6.5mm	6g x 25mm screw	6g x 25mm screw	-	-
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 *	8g x 75mm 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.



Non-Fire Rated
Steel Stud Ceilings

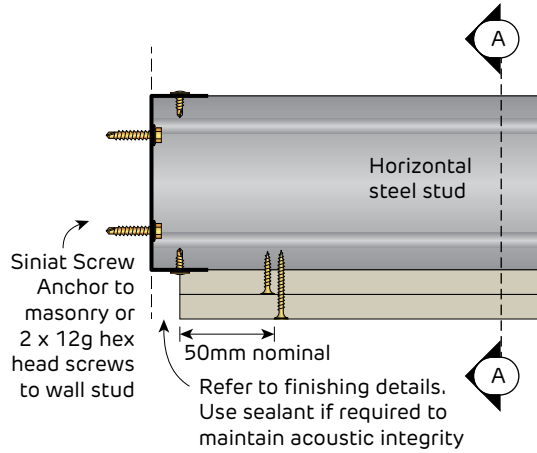


FIGURE 5 Fixed Connection EC5
Fixed Track Section

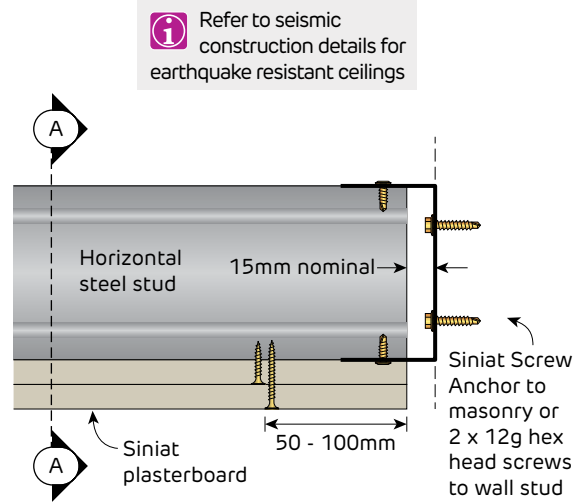


FIGURE 6 Sliding Connection EC2
Slotted Deflection Head Track Section

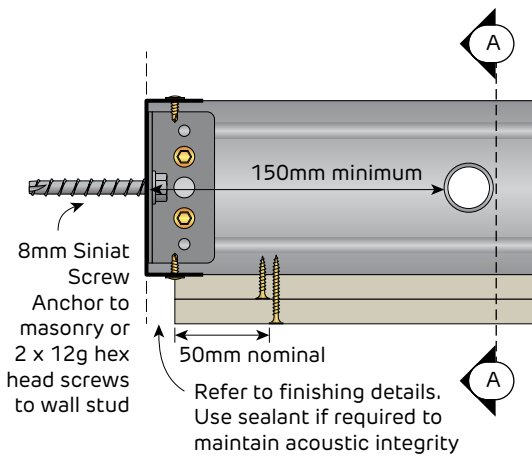


FIGURE 7 Fixed Connection EC6
Universal Bracket (UB60 or UB80) Section

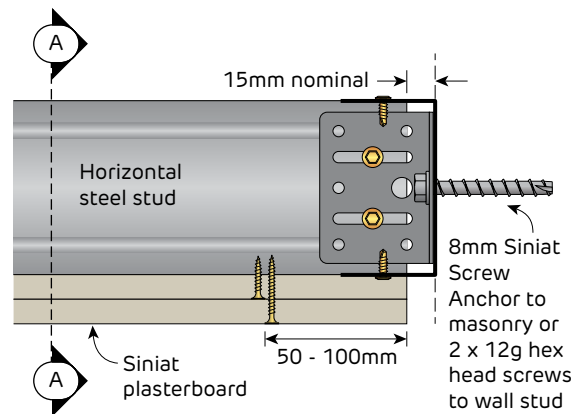
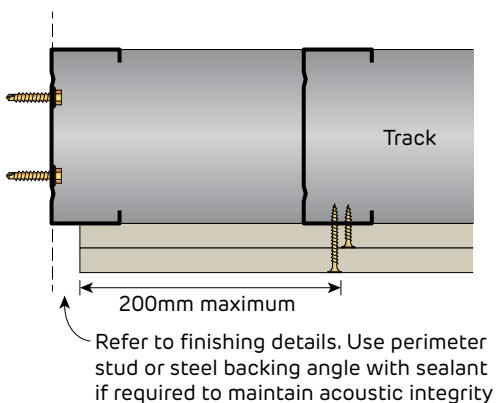


FIGURE 8 Sliding Connection EC4
Universal Bracket (UB60 or UB80) Section



SECTION A-A Edge Detail
Section



Fire Rated Steel Stud Ceilings

i Refer to seismic construction details for earthquake resistant ceilings

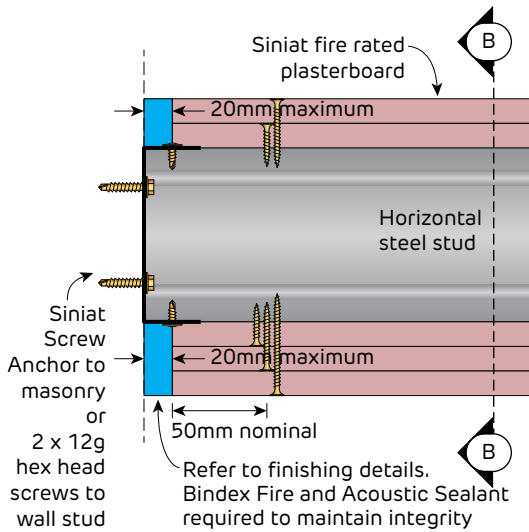


FIGURE 9 Fixed Connection EC5
Fixed Track
Section

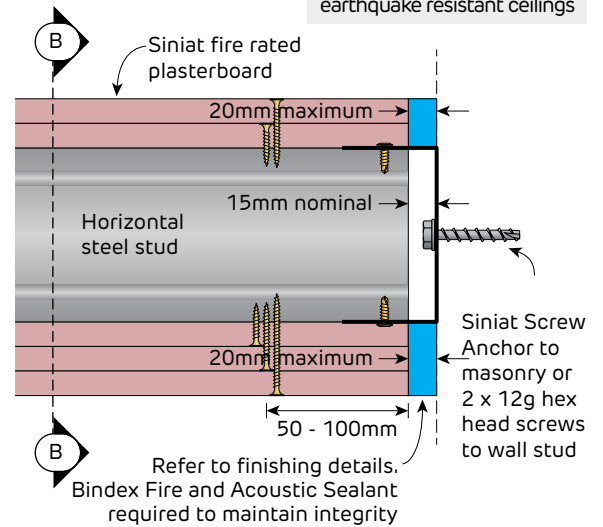


FIGURE 10 Sliding Connection EC2
Slotted Deflection Head Track
Section

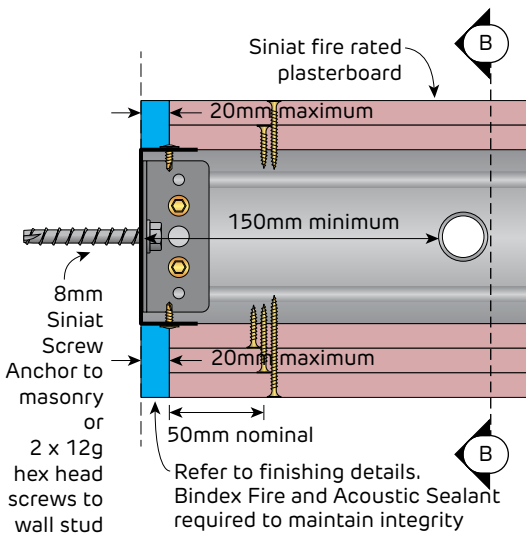


FIGURE 11 Fixed Connection EC6
Universal Bracket (UB60 or UB80)
Section

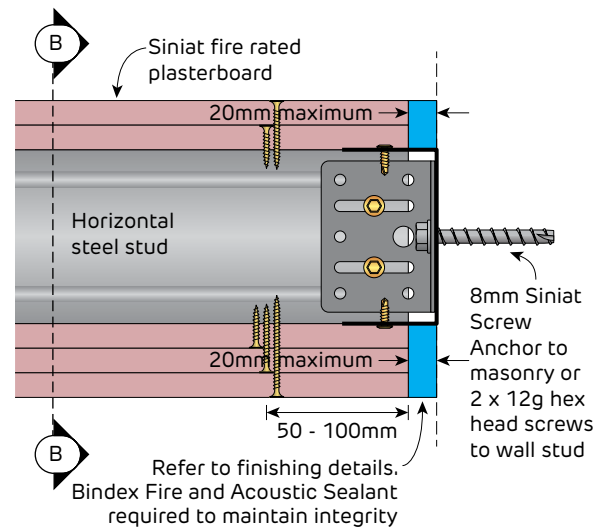
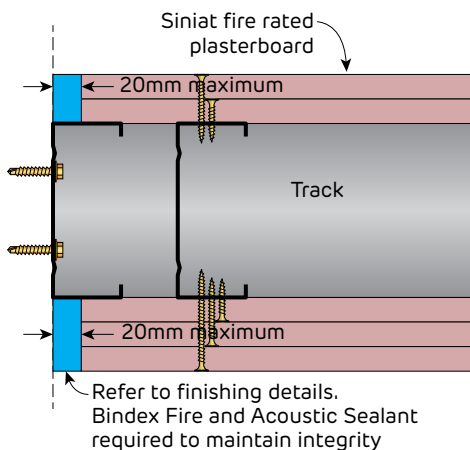
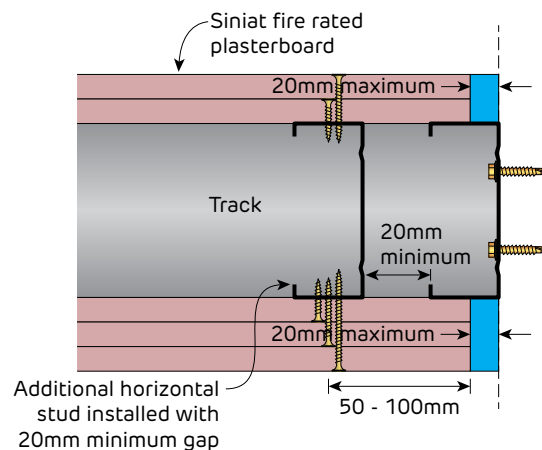


FIGURE 12 Sliding Connection EC4
Universal Bracket (UB60 or UB80)
Section



SECTION B-B Edge Detail
Section



SECTION B-B Edge Detail
Section



**Fire Rated and Non-Fire Rated
Stud Dropper Connections to Concrete**

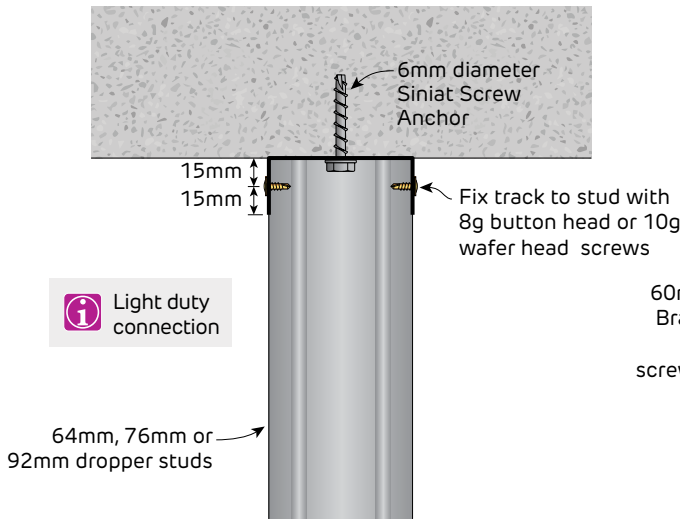


FIGURE 13 Concrete Soffit Connection SC1
Light duty connection
Section

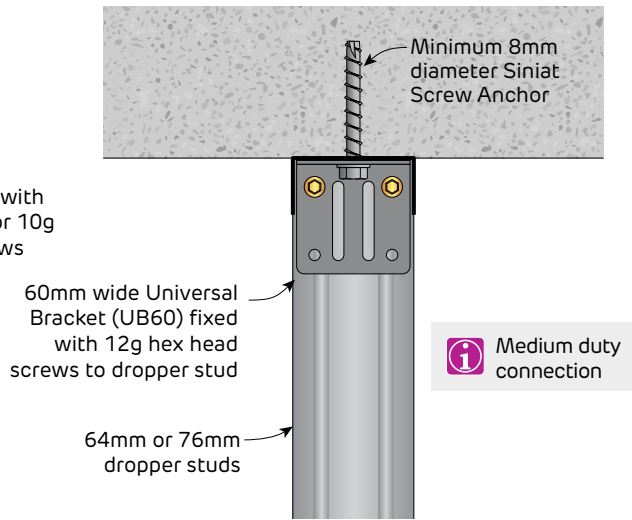


FIGURE 14 Concrete Soffit Connection SC2
64mm or 76mm studs only - Medium duty
Section

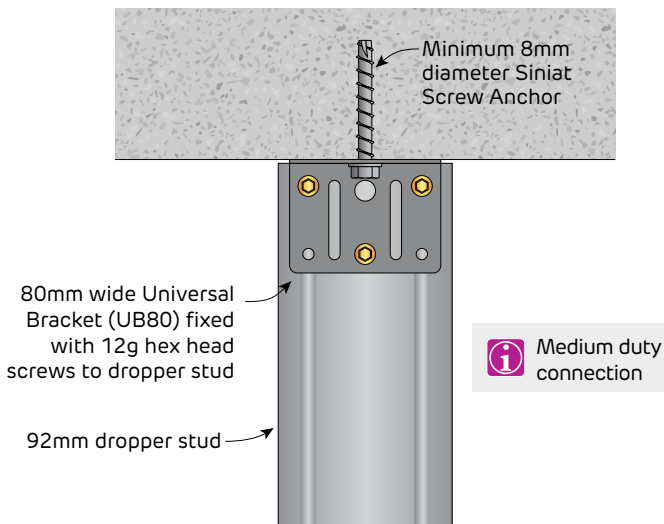


FIGURE 15 Concrete Soffit Connection SC2
92mm studs only - Medium duty
Section

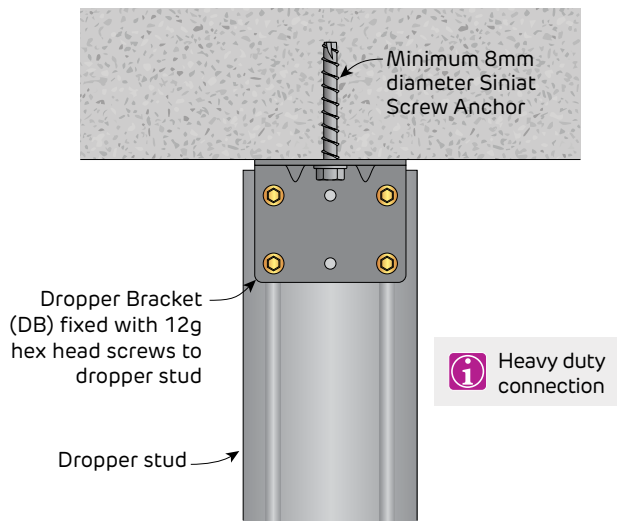


FIGURE 16 Concrete Soffit Connection SC3
Heavy duty
Section

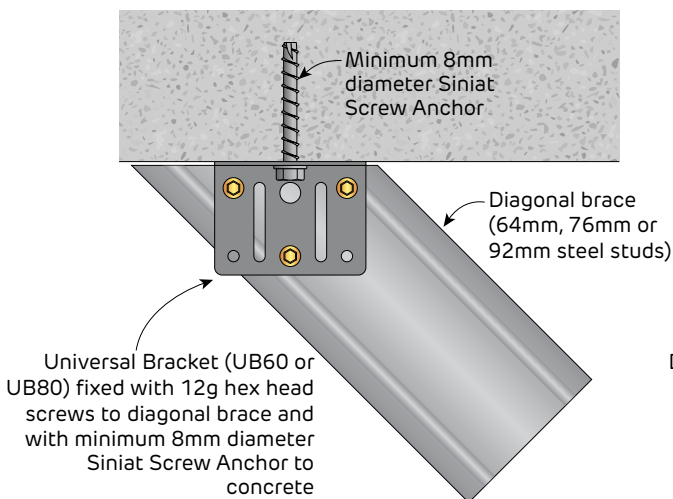


FIGURE 17 Diagonal Brace to Concrete
64mm, 76mm or 92mm studs only - Medium duty
Section

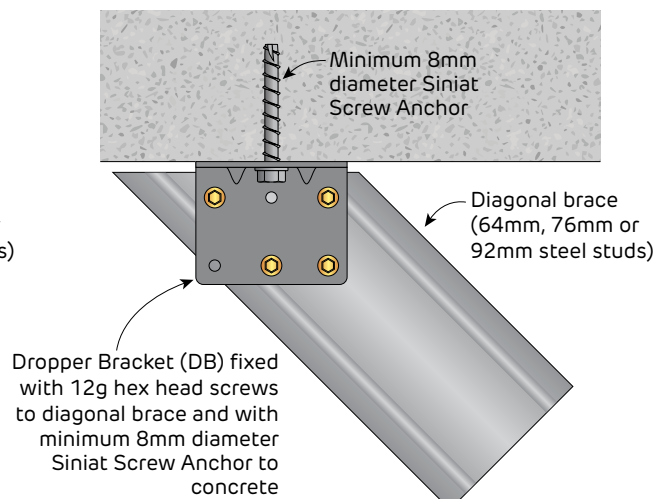


FIGURE 18 Diagonal Brace to Concrete
64mm, 76mm or 92mm studs only - Heavy duty
Section



Fire Rated and Non-Fire Rated Stud Dropper Connections to Purlins

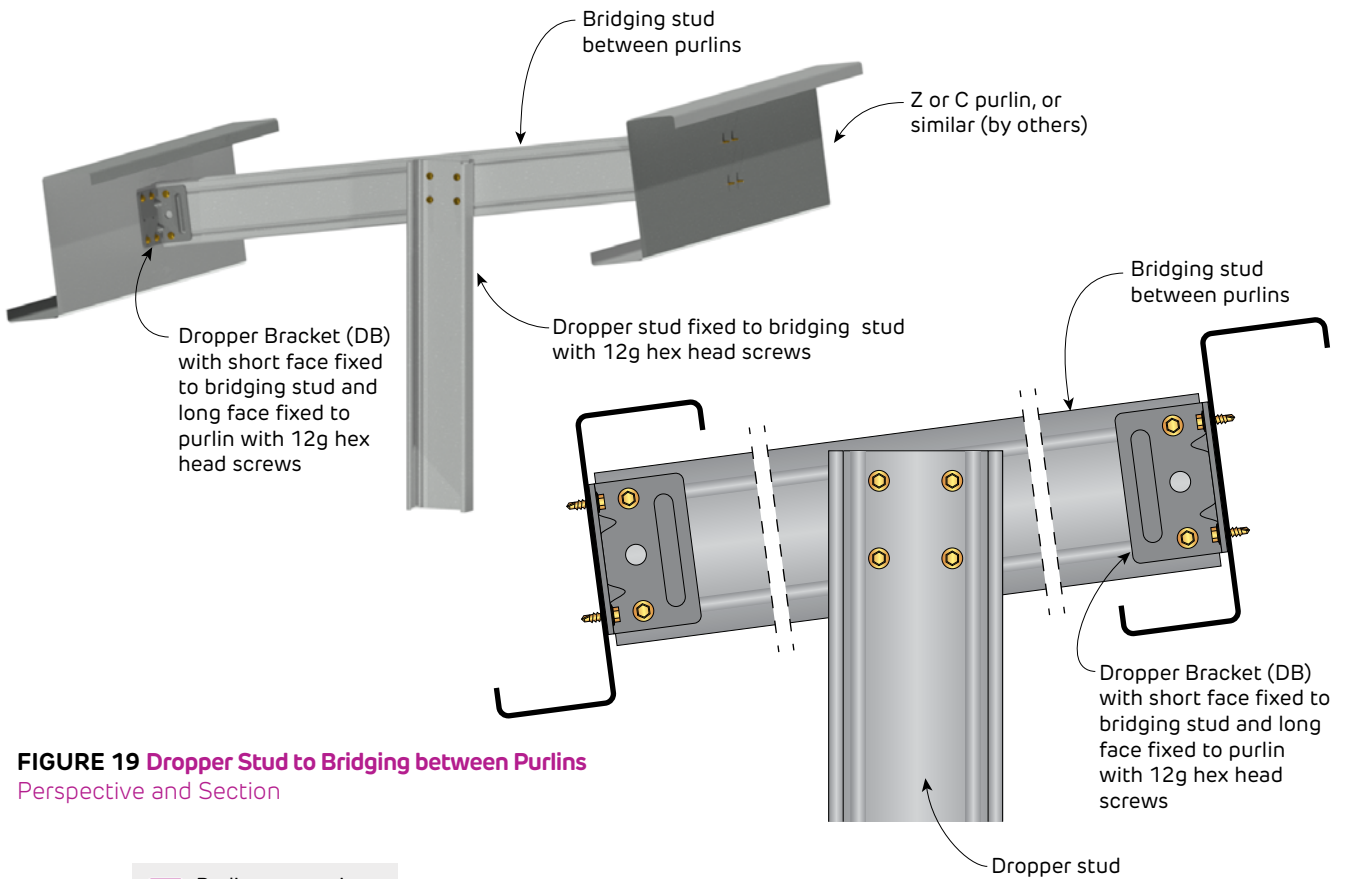



FIGURE 19 Dropper Stud to Bridging between Purlins
Perspective and Section

 Purlins supporting drywall construction must be designed for the additional intended loads

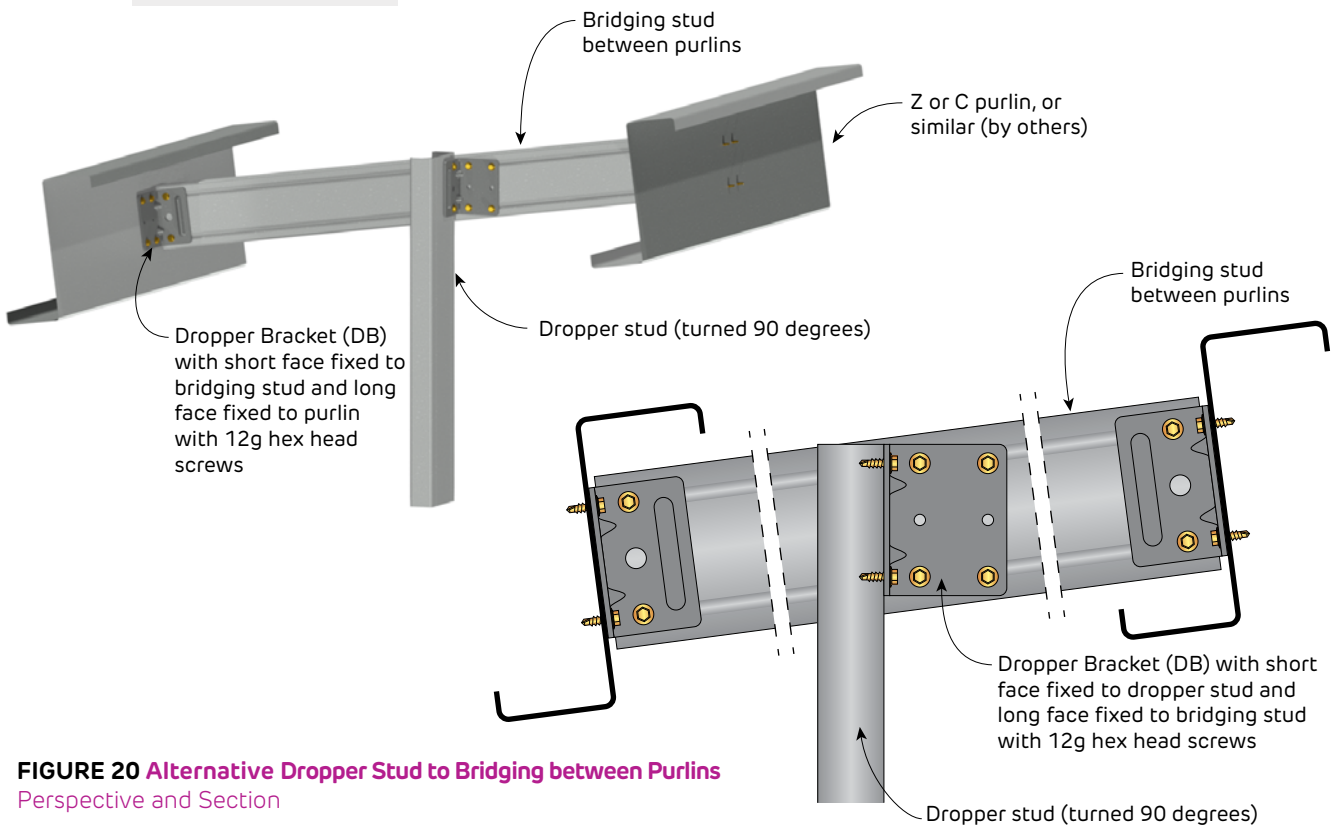


FIGURE 20 Alternative Dropper Stud to Bridging between Purlins
Perspective and Section



**Fire Rated and Non-Fire Rated
Stud Dropper Connections to Purlins**

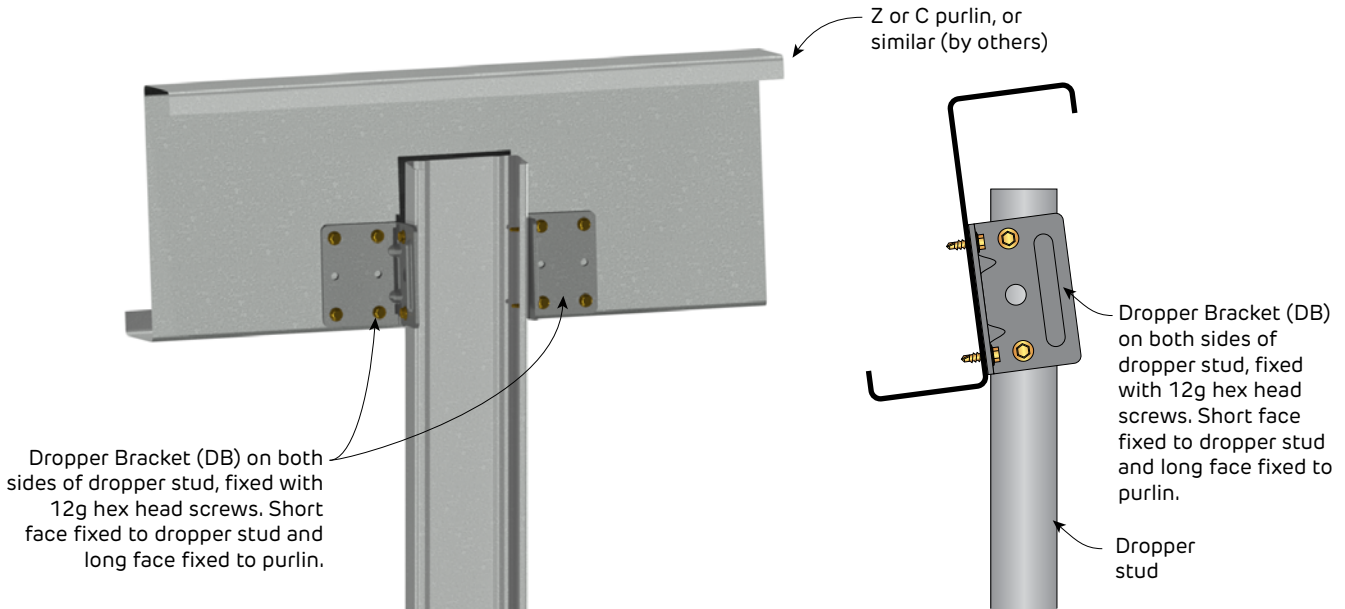


FIGURE 21 Dropper Stud to Purlin
Perspective and Section

**Fire Rated and Non-Fire Rated
Diagonal Bracing Connections to Purlins**

i Purlins supporting drywall construction must be designed for the additional intended loads

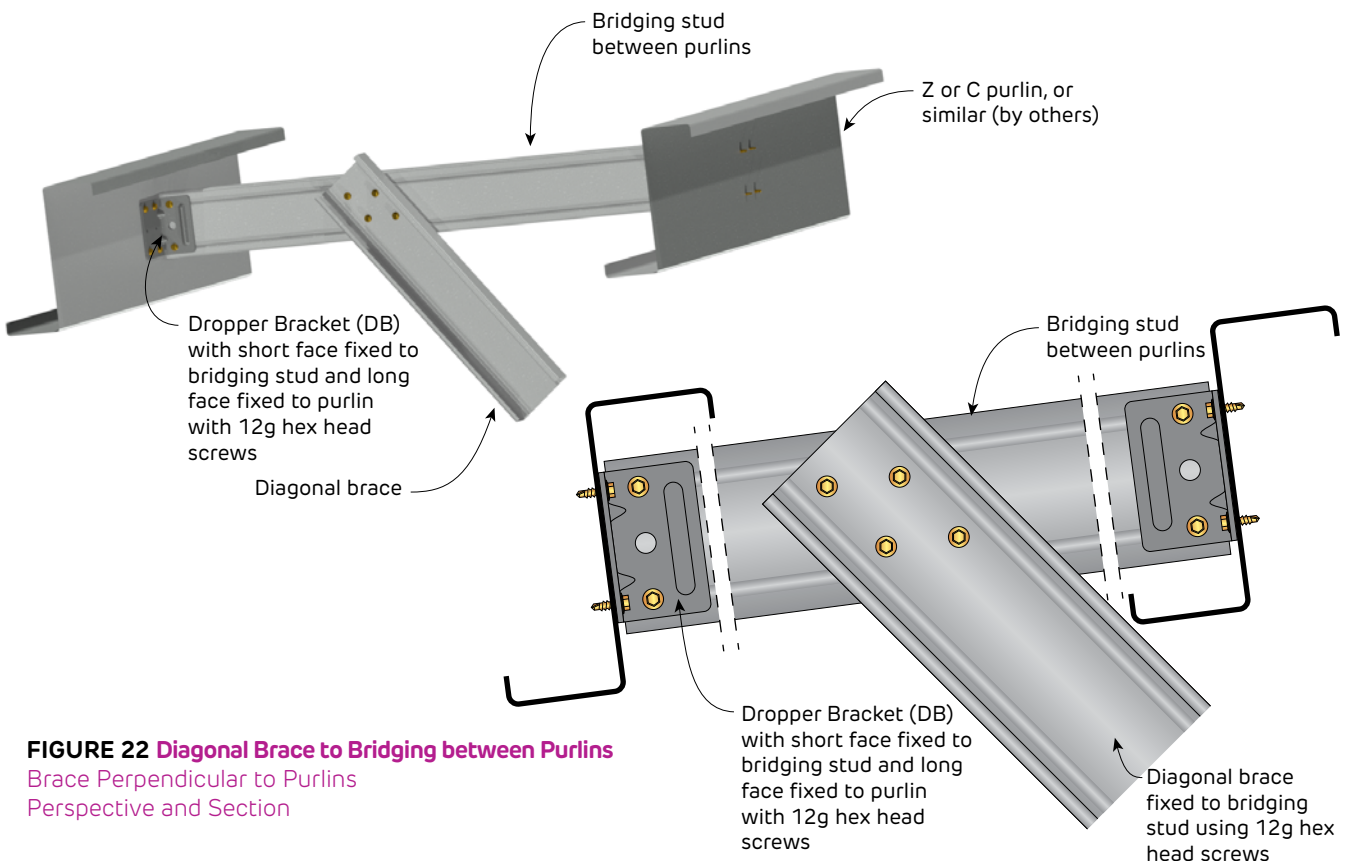


FIGURE 22 Diagonal Brace to Bridging between Purlins
Brace Perpendicular to Purlins
Perspective and Section

Fire Rated and Non-Fire Rated Diagonal Bracing Connections to Purlins

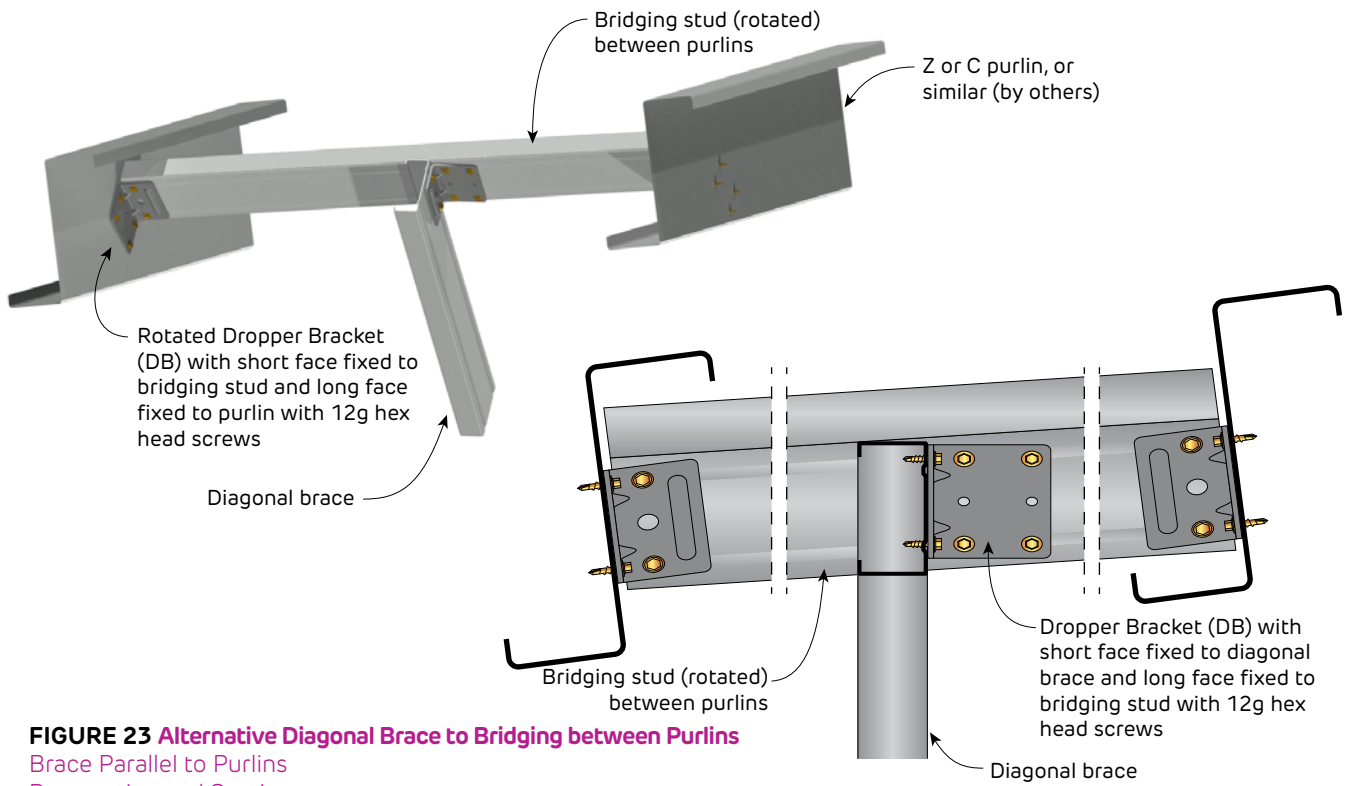


FIGURE 23 Alternative Diagonal Brace to Bridging between Purlins
Brace Parallel to Purlins
Perspective and Section

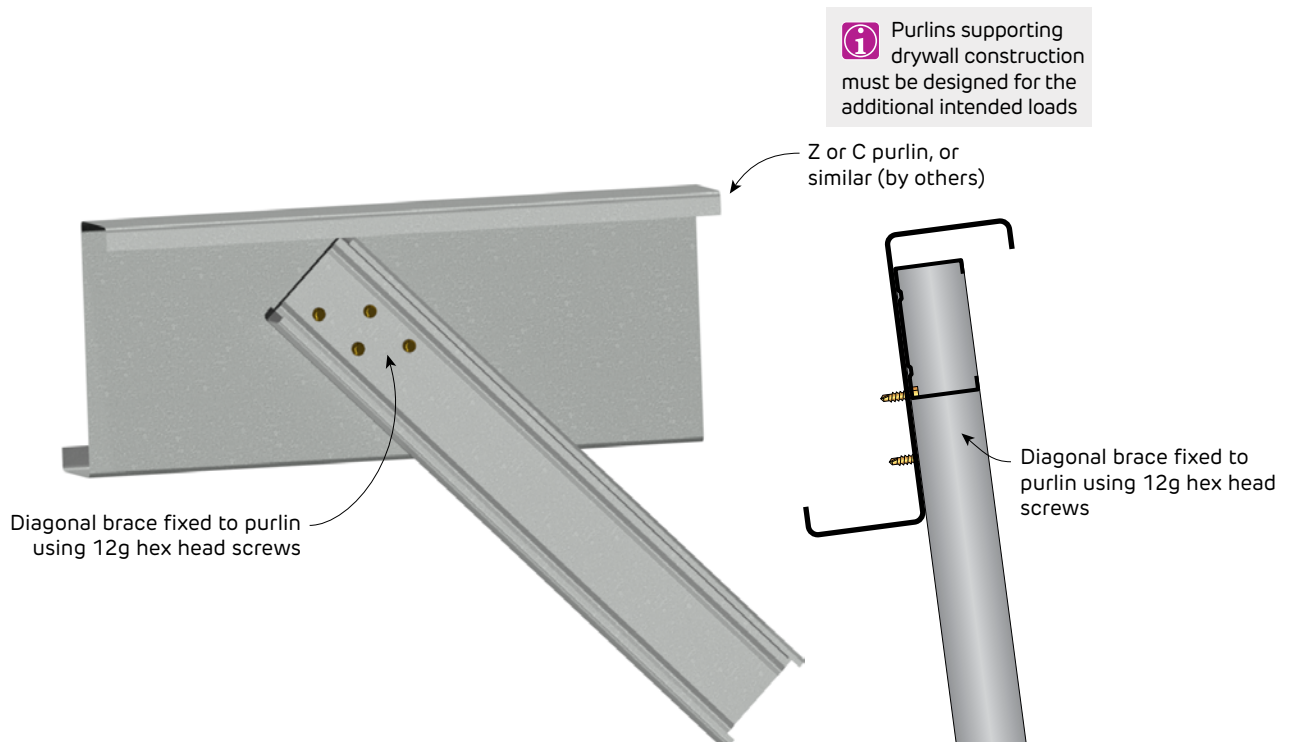
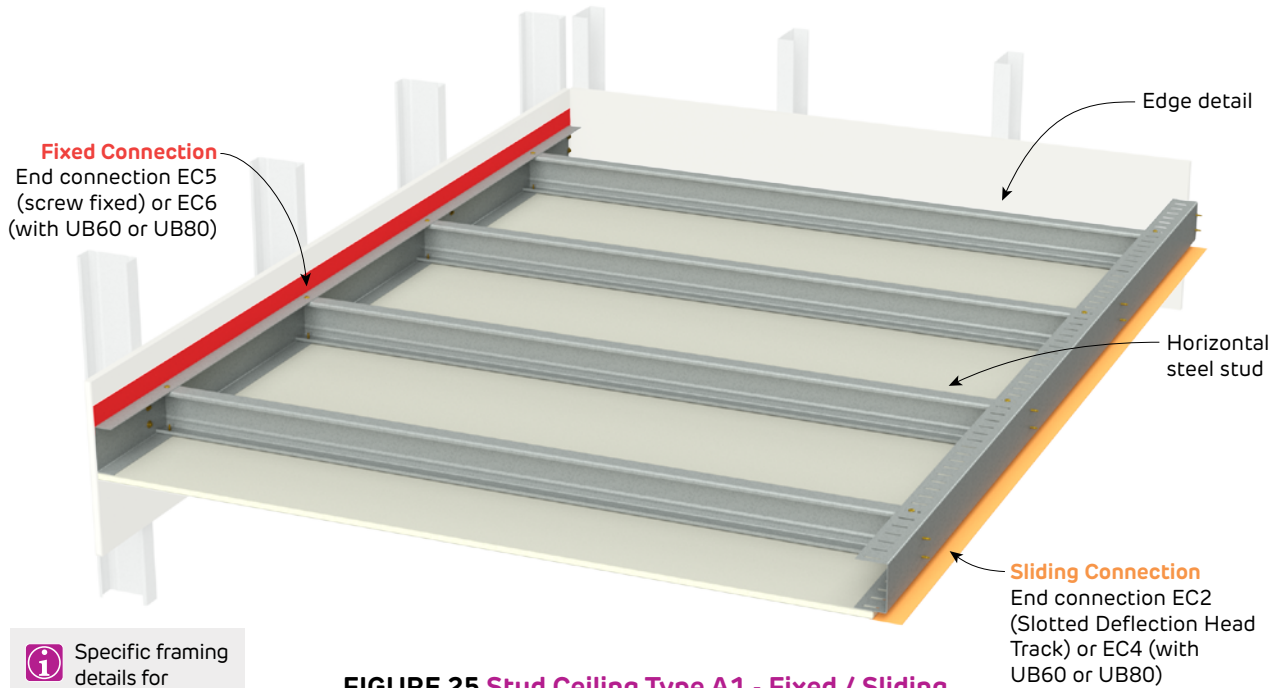


FIGURE 24 Diagonal Brace to Purlin
Brace Parallel to Purlins
Perspective and Section



Non-Fire Rated

Seismic Details for Stud Ceiling - Type A1 Fixed / Sliding



i Specific framing details for earthquake actions must be determined by structural design

FIGURE 25 Stud Ceiling Type A1 - Fixed / Sliding
One side **Fixed** and the opposite side **Sliding**
Perspective

i Some damage to ceiling linings for finishing details with low tolerance to movement can be expected in a Serviceability Earthquake event.

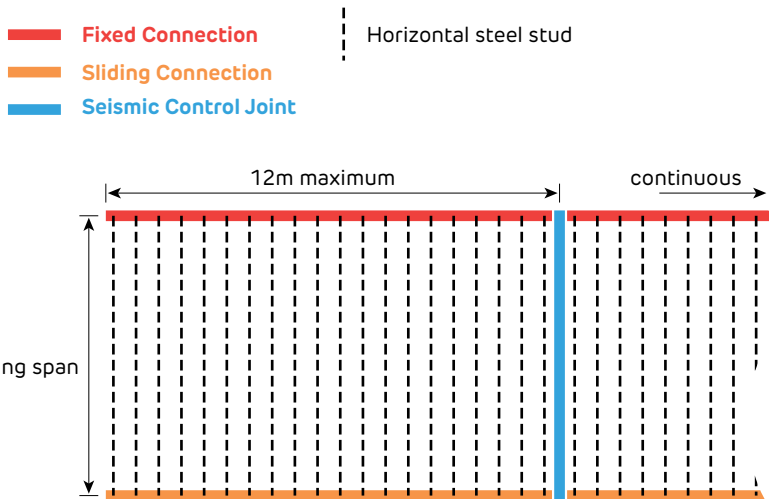


FIGURE 26 Stud Ceiling Type A1 - Fixed / Sliding
One side **Fixed** and the opposite side **Sliding**
Plan

Non-Fire Rated

Seismic Details for Stud Ceiling - Type A1 Fixed / Sliding

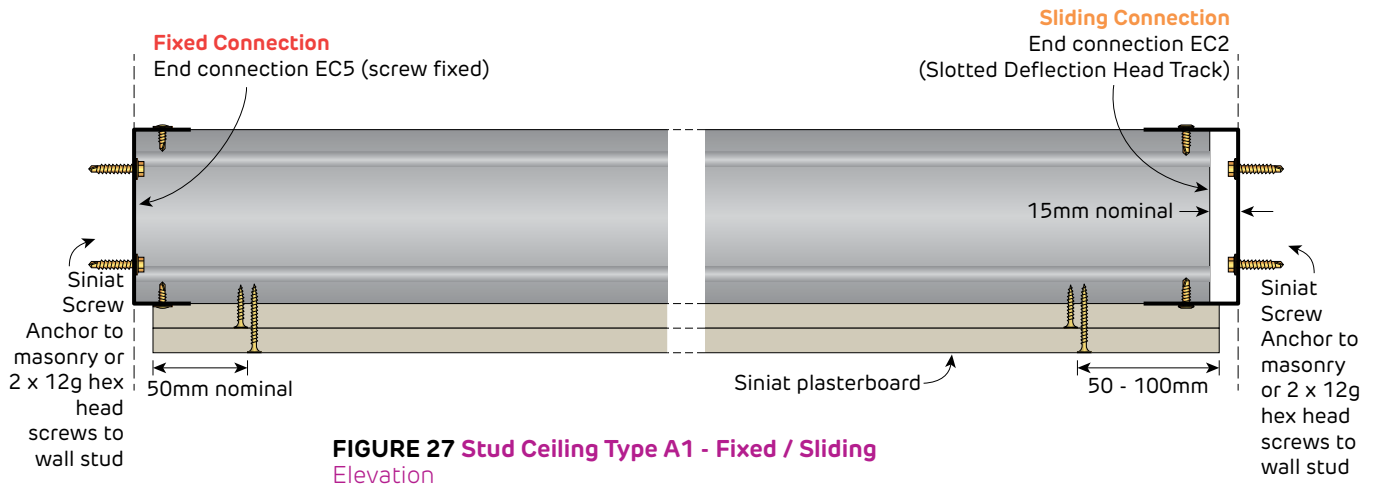


FIGURE 27 Stud Ceiling Type A1 - Fixed / Sliding
Elevation

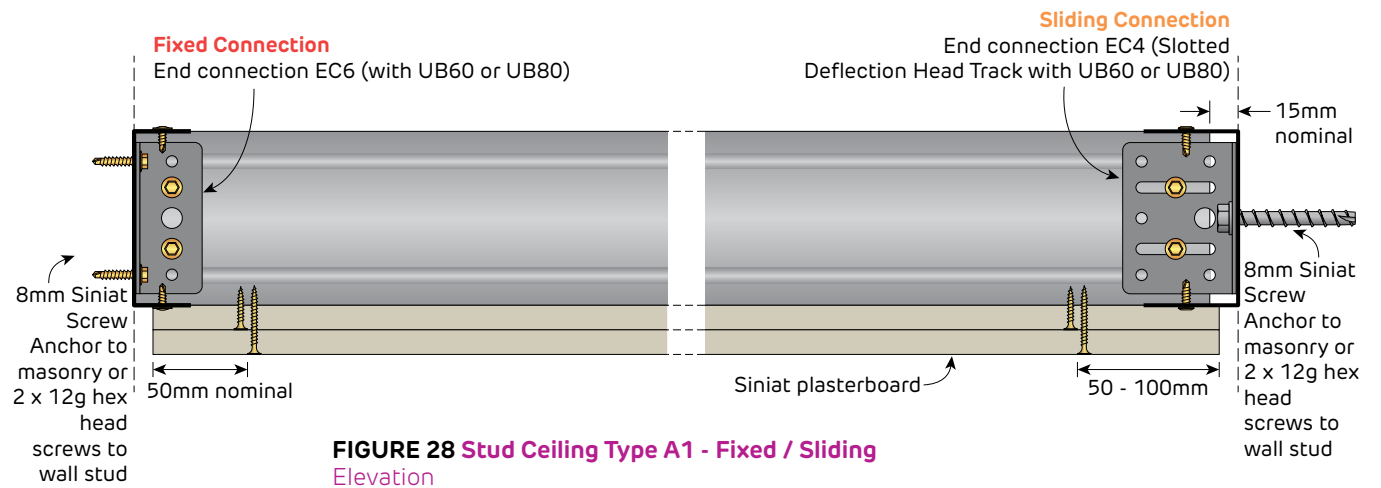


FIGURE 28 Stud Ceiling Type A1 - Fixed / Sliding
Elevation

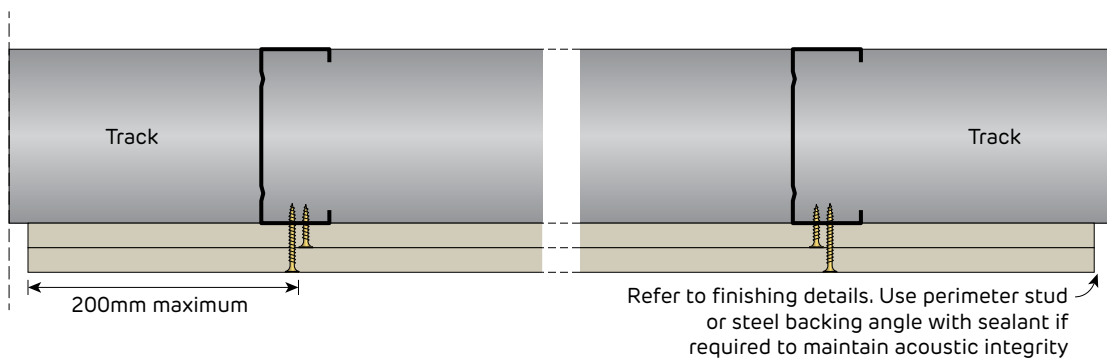
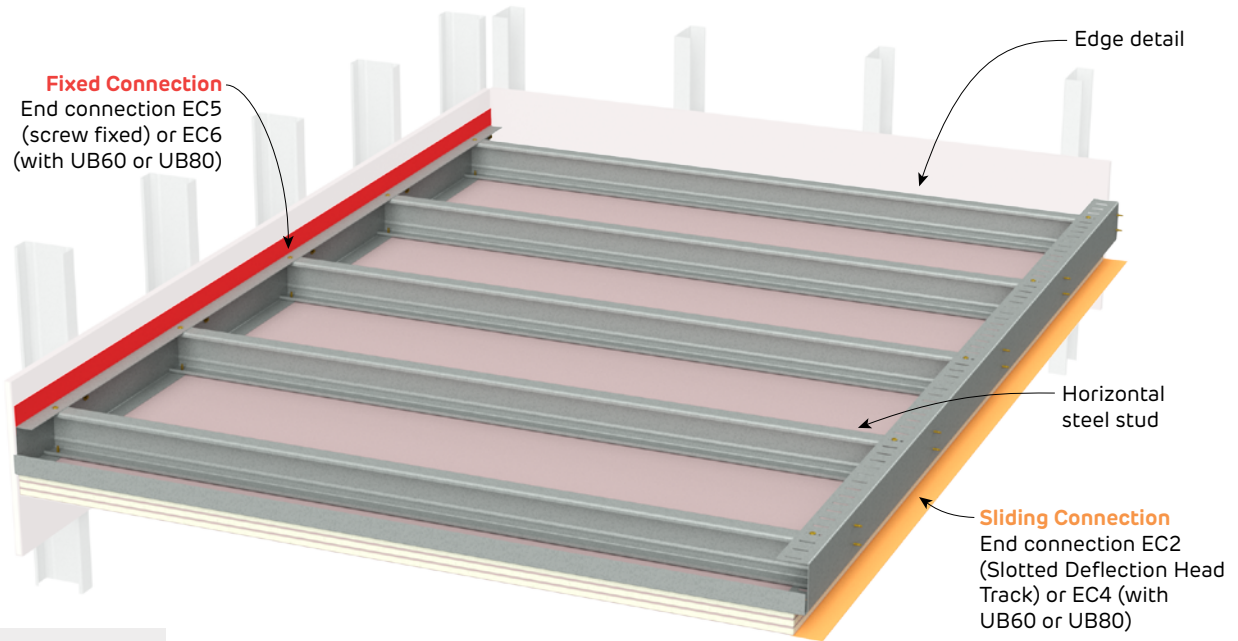


FIGURE 29 Stud Ceiling Type A1 - Edge Detail
Section



Fire Rated

Seismic Details for Stud Ceiling - Type A1 Fixed / Sliding



i Specific framing details for earthquake actions must be determined by structural design

FIGURE 30 Stud Ceiling Type A1 - Fixed / Sliding

One side **Fixed** and the opposite side **Sliding**
Perspective

i Some damage to ceiling linings for finishing details with low tolerance to movement can be expected in a Serviceability Earthquake event.

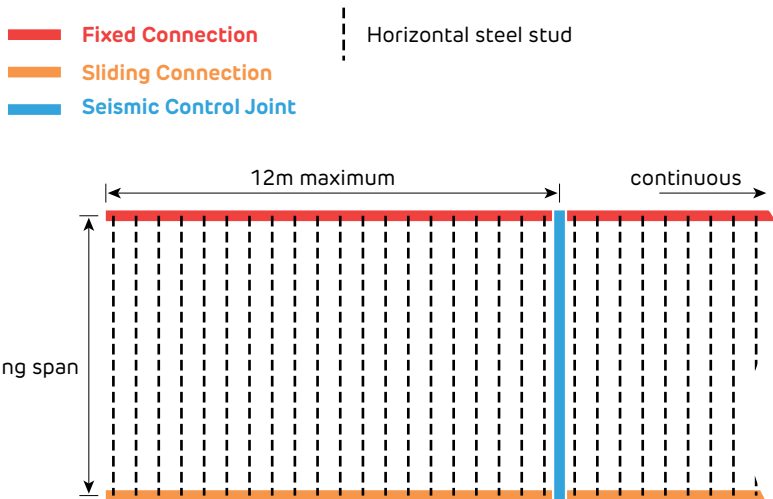
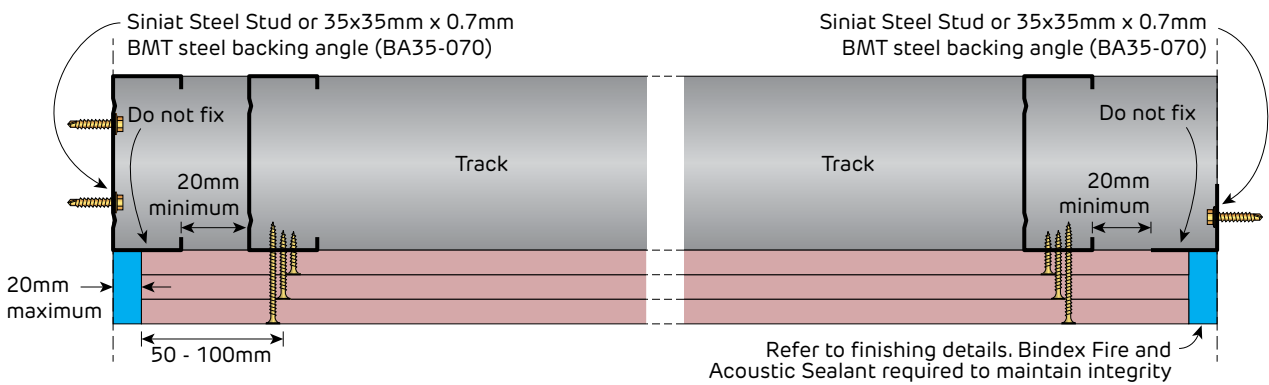
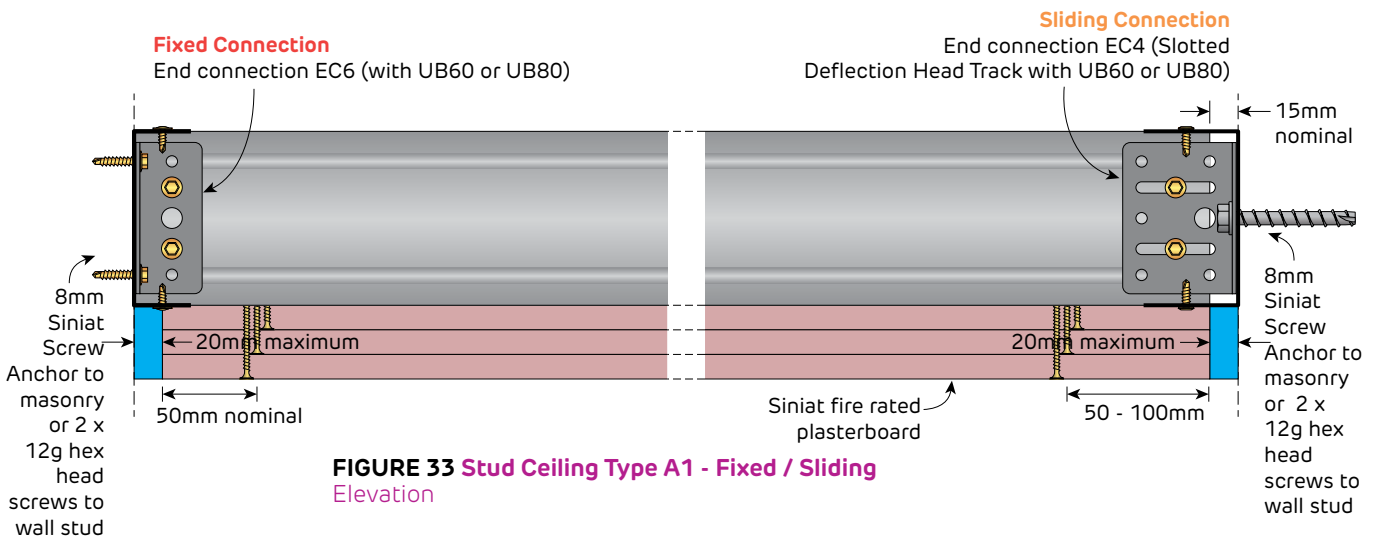
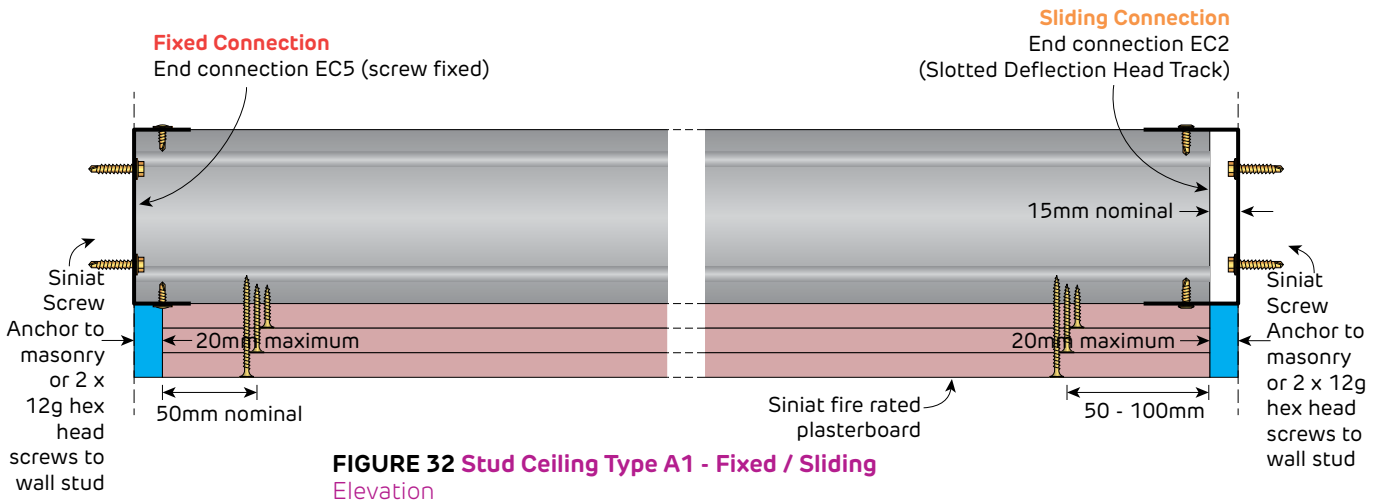


FIGURE 31 Stud Ceiling Type A1 - Fixed / Sliding

One side **Fixed** and the opposite side **Sliding**
Plan

Fire Rated

Seismic Details for Stud Ceiling - Type A1 Fixed / Sliding





Fire Rated and Non-Fire Rated

Seismic Details for Stud Ceiling - Type A2 Fixed / Sliding

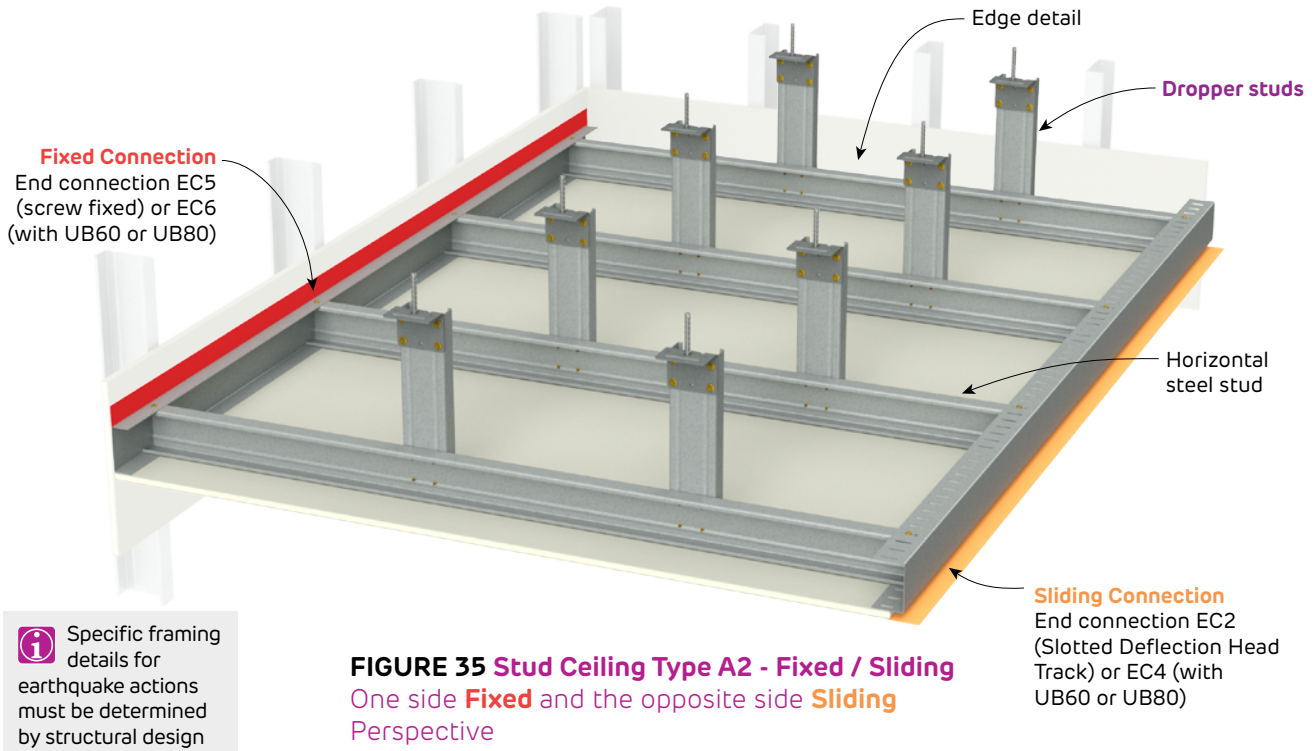


FIGURE 35 Stud Ceiling Type A2 - Fixed / Sliding
 One side **Fixed** and the opposite side **Sliding**
 Perspective

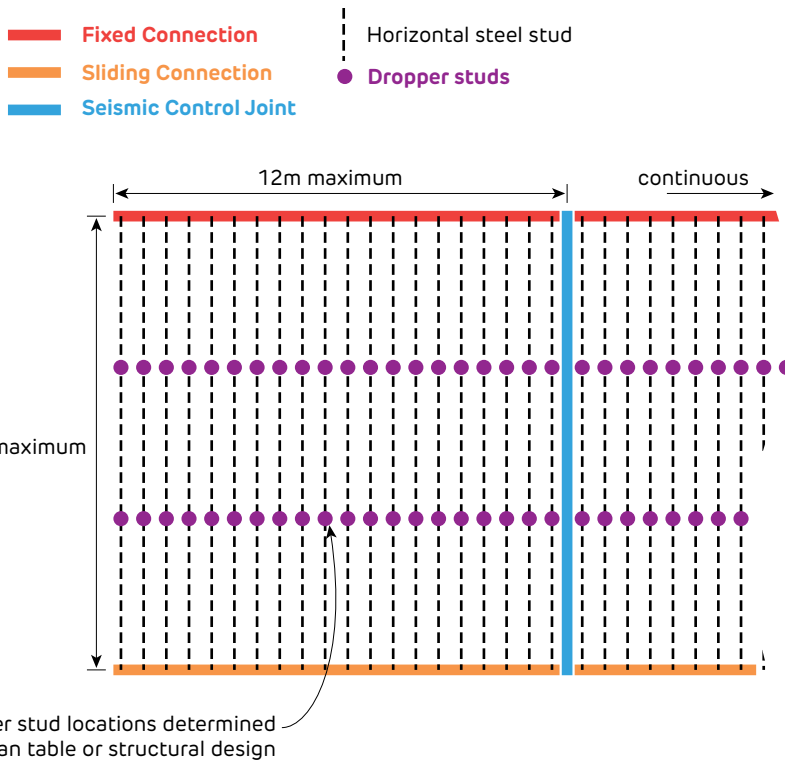


FIGURE 36 Stud Ceiling Type A2 - Fixed / Sliding
 One side **Fixed** and the opposite side **Sliding**
 Plan

Non-Fire Rated

Seismic Details for Stud Ceiling - Type A2 Fixed / Sliding

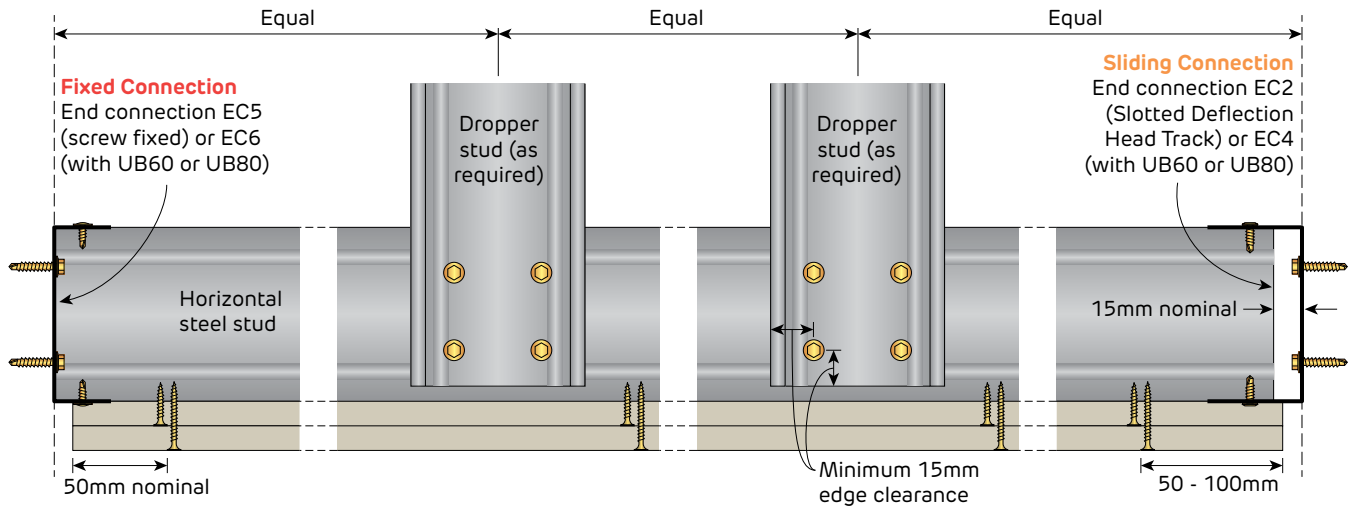


FIGURE 37 Stud Ceiling Type A2 - Fixed / Sliding
Elevation

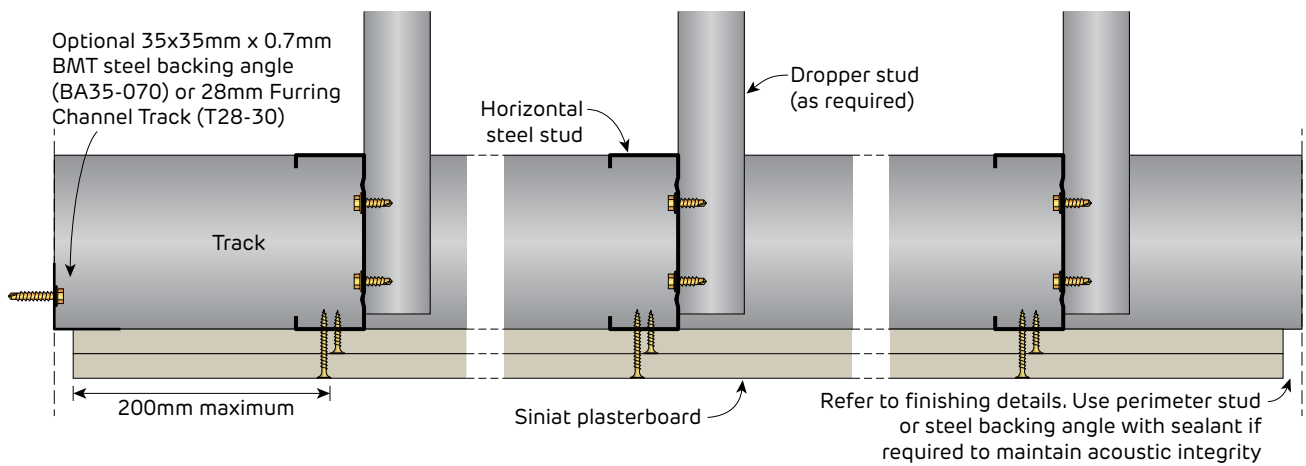


FIGURE 38 Stud Ceiling Type A2 - Edge Detail
Section



Fire Rated

Seismic Details for Stud Ceiling - Type A2 Fixed / Sliding

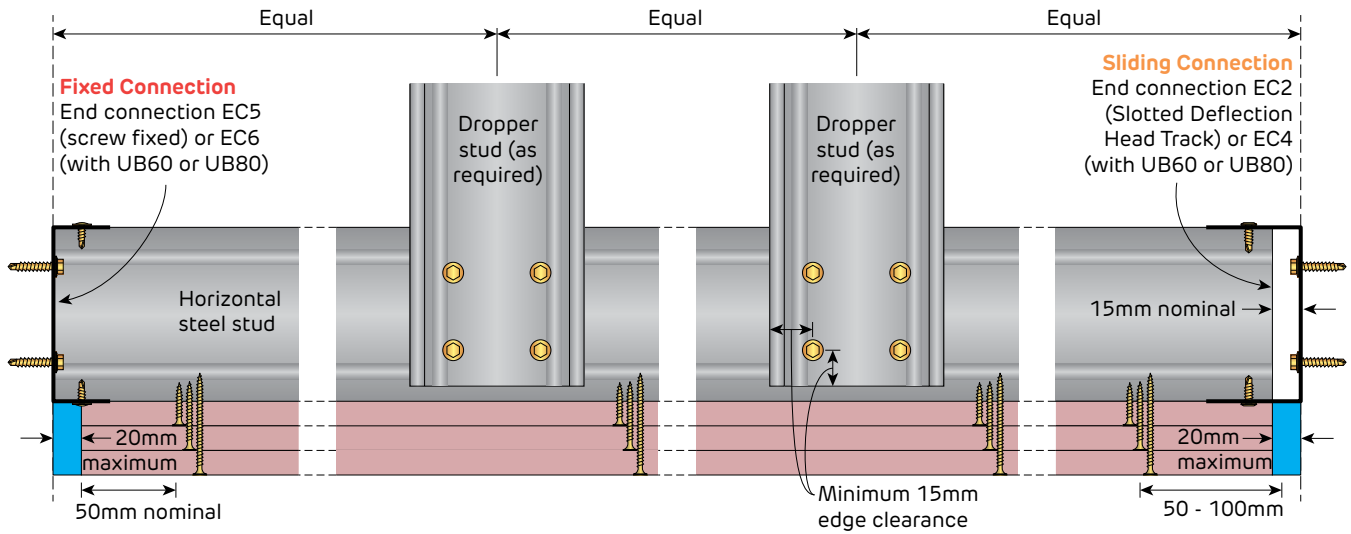


FIGURE 39 Stud Ceiling Type A2 - Fixed / Sliding
Elevation

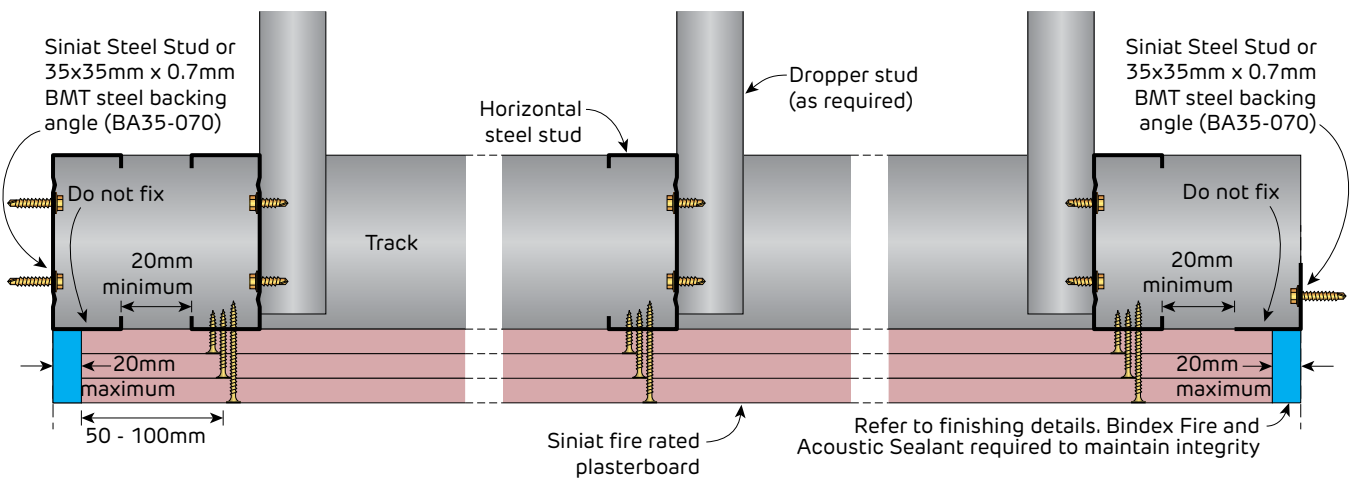


FIGURE 40 Stud Ceiling Type A2 - Edge Detail
Section

Fire Rated and Non-Fire Rated

Seismic Details for Stud and Batten Ceiling - Type A3 Fixed / Sliding

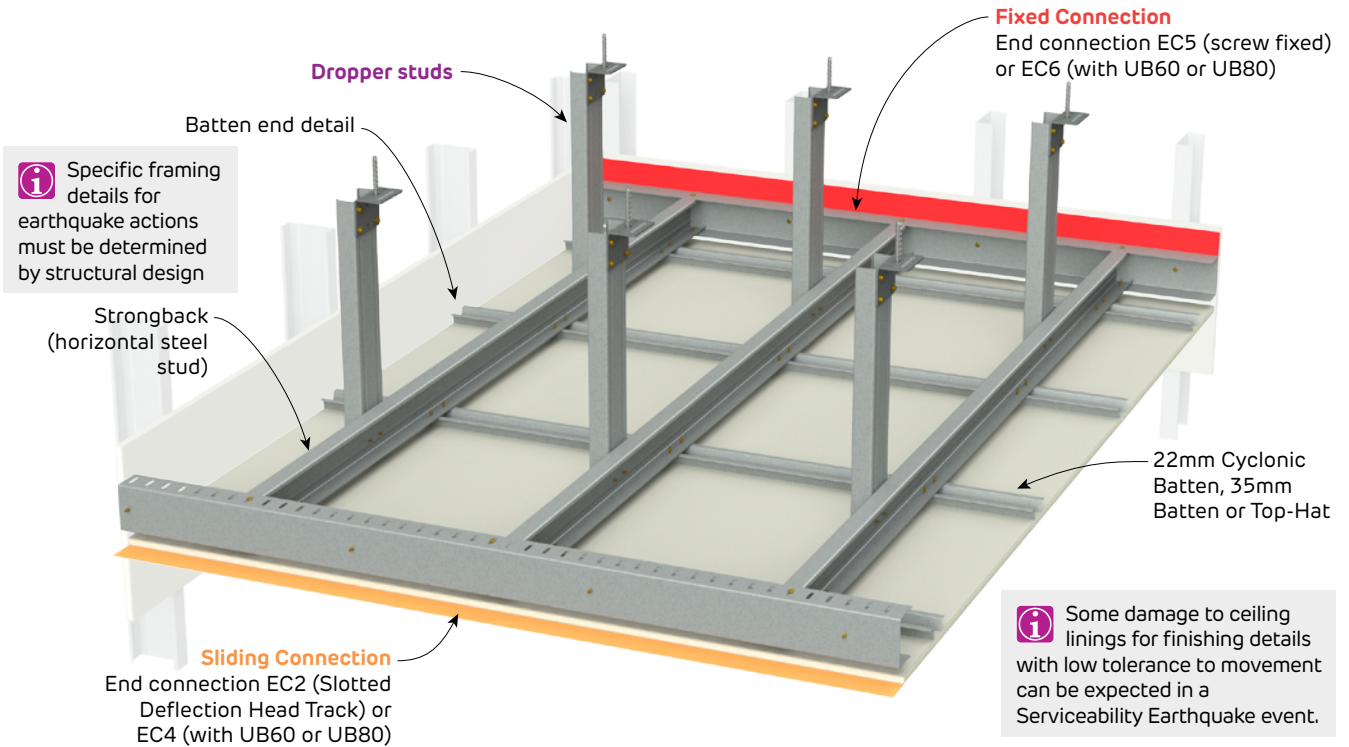


FIGURE 41 Stud Ceiling Type A3 - Fixed / Sliding

One side **Fixed** and the opposite side **Sliding**
Perspective

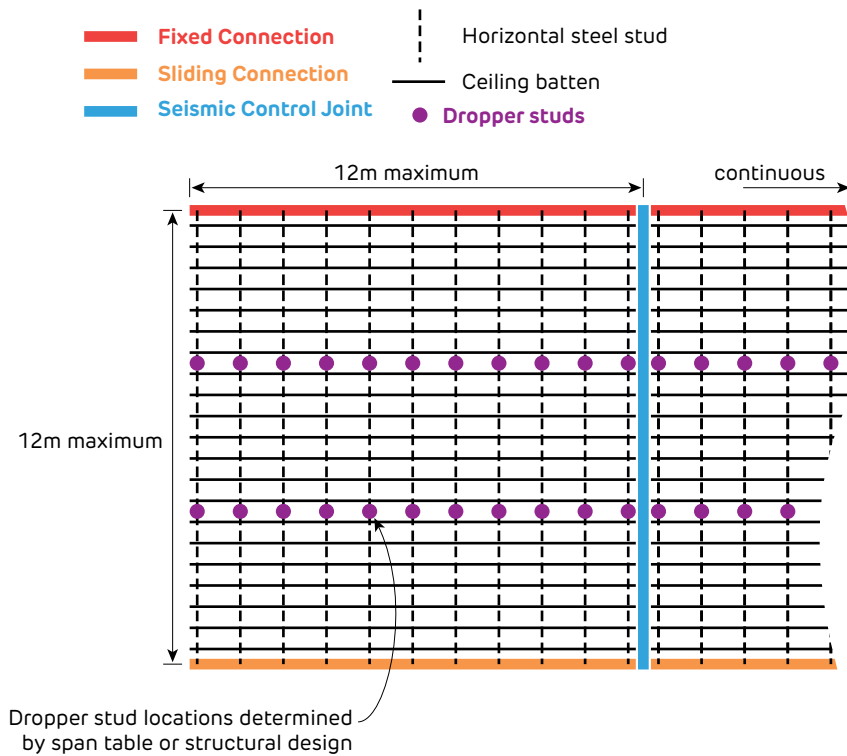


FIGURE 42 Stud Ceiling Type A3 - Fixed / Sliding

One Side **Fixed** and the other Side **Sliding**
Plan



Non-Fire Rated

Seismic Details for Stud and Batten Ceiling - Type A3 Fixed / Sliding

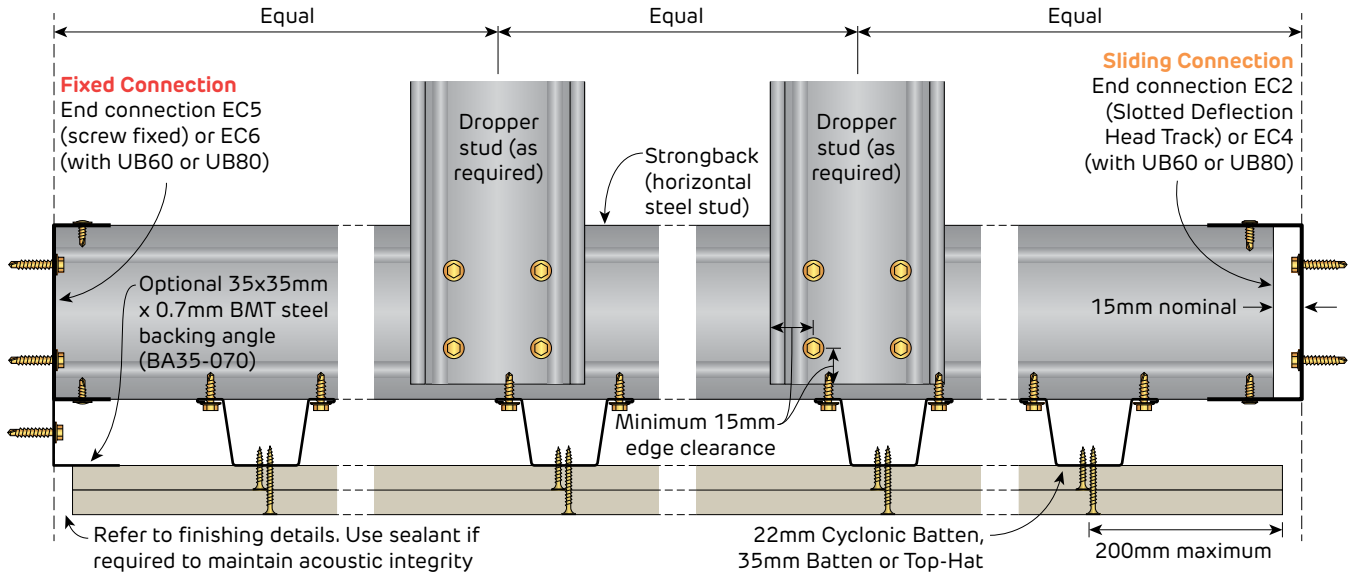


FIGURE 43 Stud Ceiling Type A3 - Fixed / Sliding
Elevation

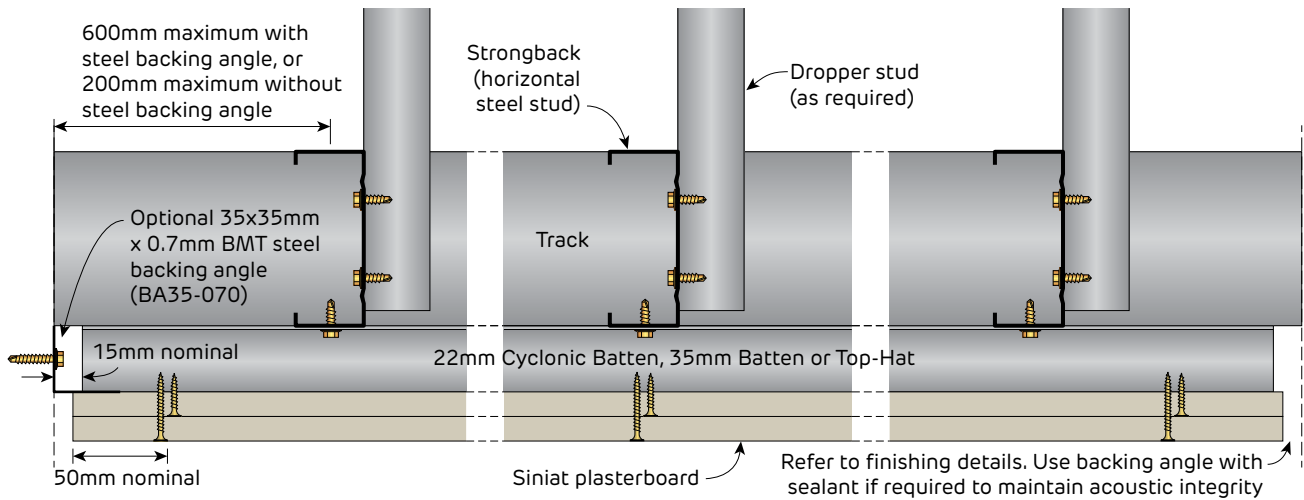
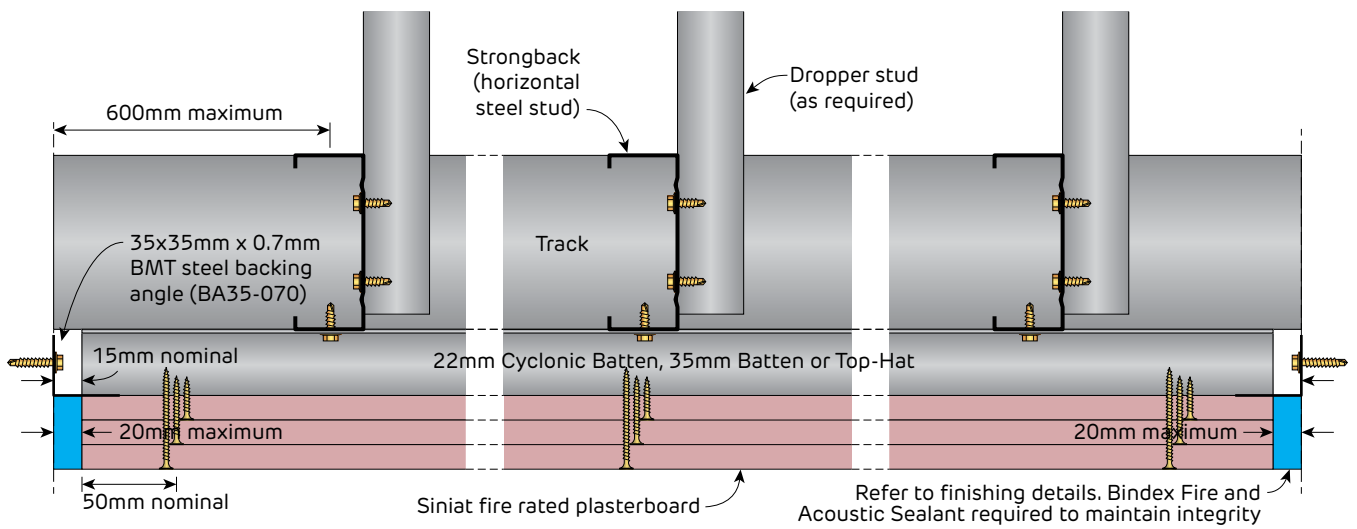
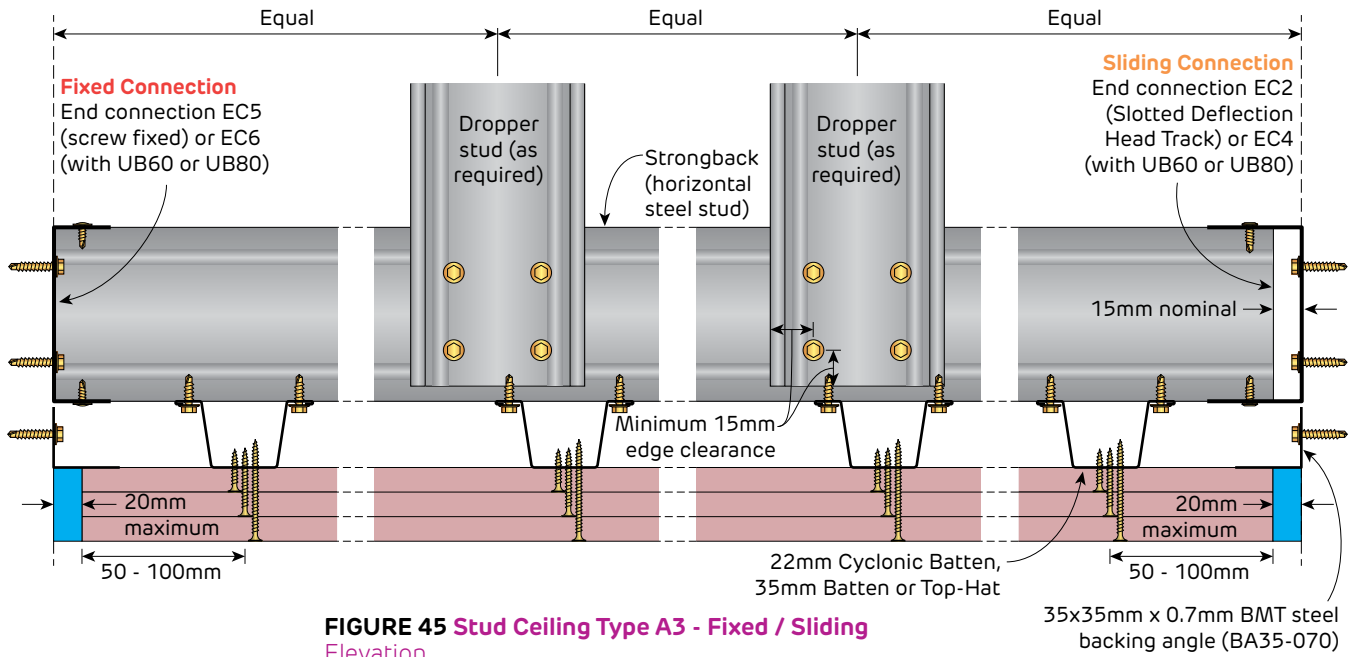


FIGURE 44 Stud Ceiling Type A3 - Batten End Detail
Section

Fire Rated

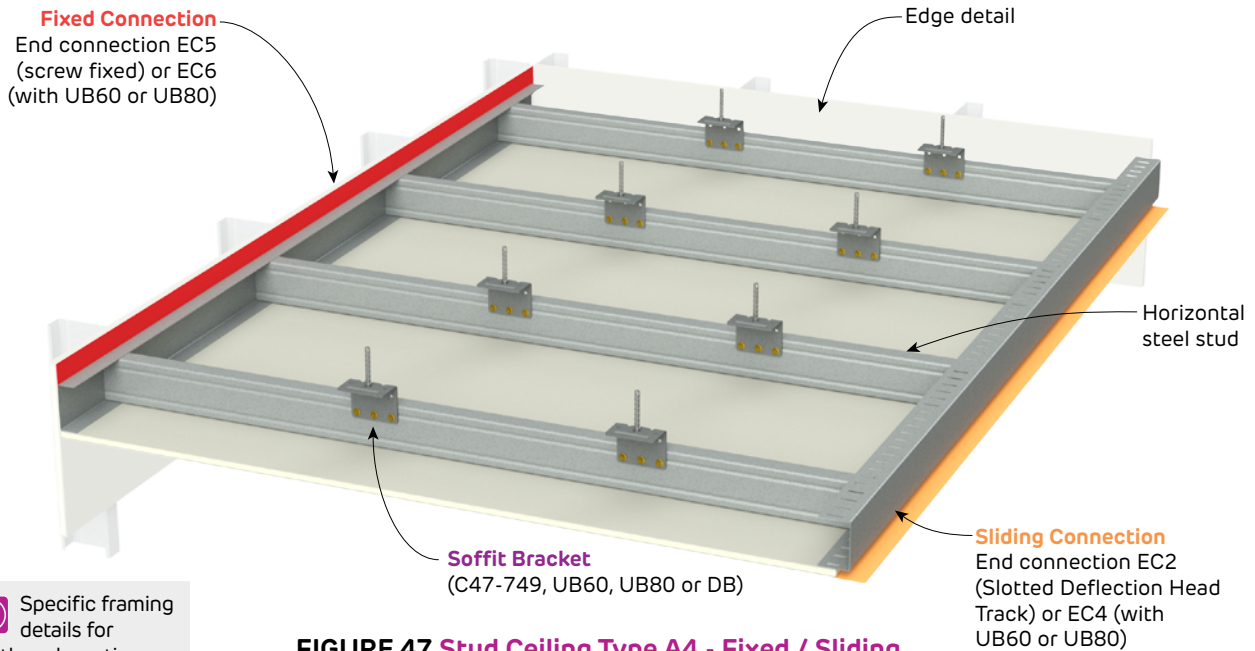
Seismic Details for Stud and Batten Ceiling - Type A3 Fixed / Sliding





Fire Rated and Non-Fire Rated

Seismic Details for Stud Ceiling - Type A4 Fixed / Sliding



i Specific framing details for earthquake actions must be determined by structural design

FIGURE 47 Stud Ceiling Type A4 - Fixed / Sliding
One side **Fixed** and the opposite side **Sliding**
Perspective

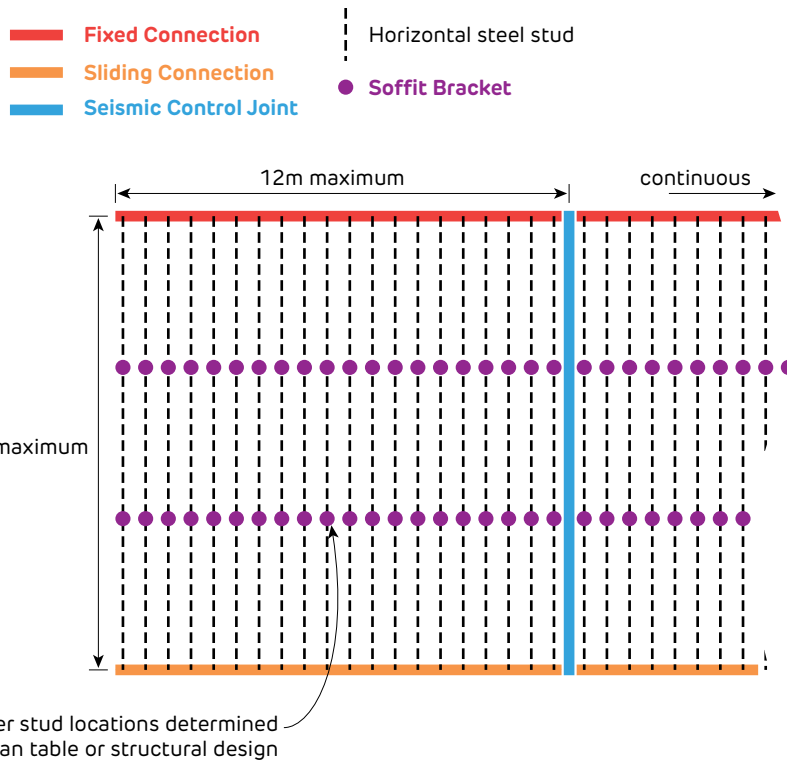


FIGURE 48 Stud Ceiling Type A4 - Fixed / Sliding
One Side **Fixed** and the other Side **Sliding**
Plan

Non-Fire Rated

Seismic Details for Stud Ceiling - Type A4 Fixed / Sliding

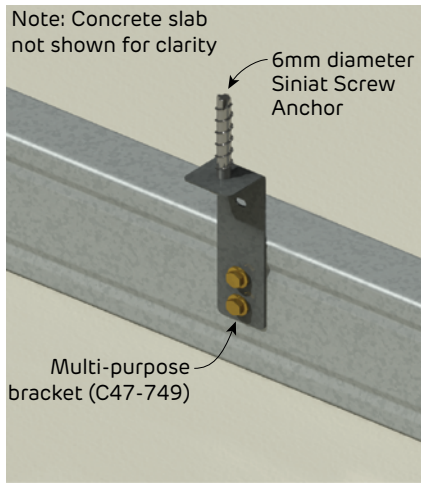


FIGURE 49 Multi-purpose Bracket
Option 1 Light Duty Connection
Perspective

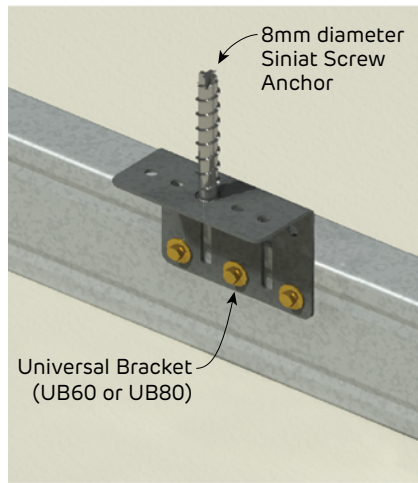


FIGURE 50 Universal Bracket
Option 2 Medium Duty Connection
Perspective

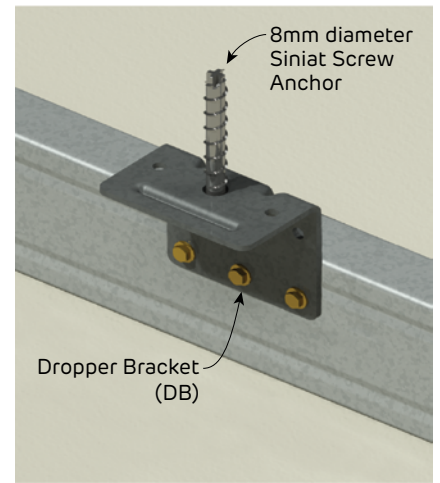


FIGURE 51 Dropper Bracket
Option 3 Heavy Duty Connection
Perspective

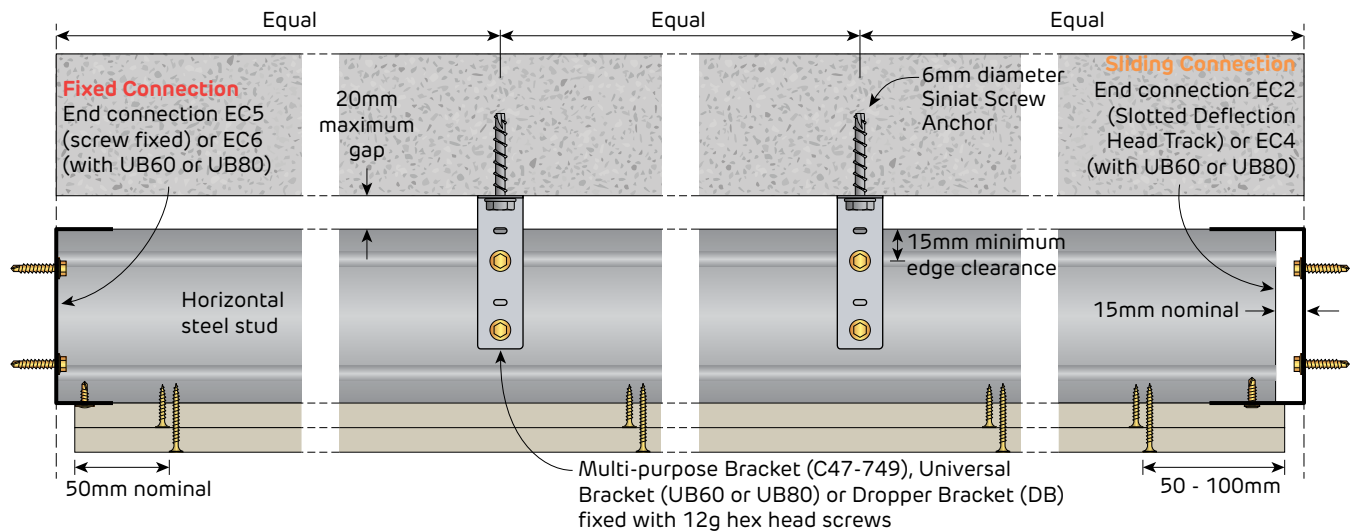


FIGURE 52 Stud Ceiling Type A4 - Fixed / Sliding
Elevation

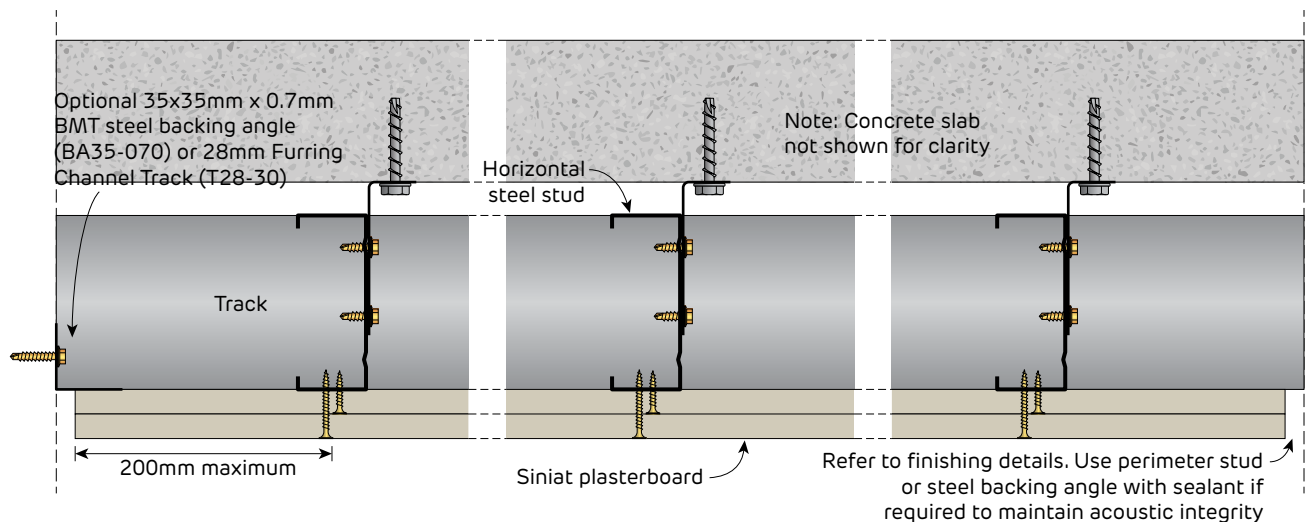


FIGURE 53 Stud Ceiling Type A4 - Edge Detail
Section



Fire Rated

Seismic Details for Stud Ceiling - Type A4 Fixed / Sliding

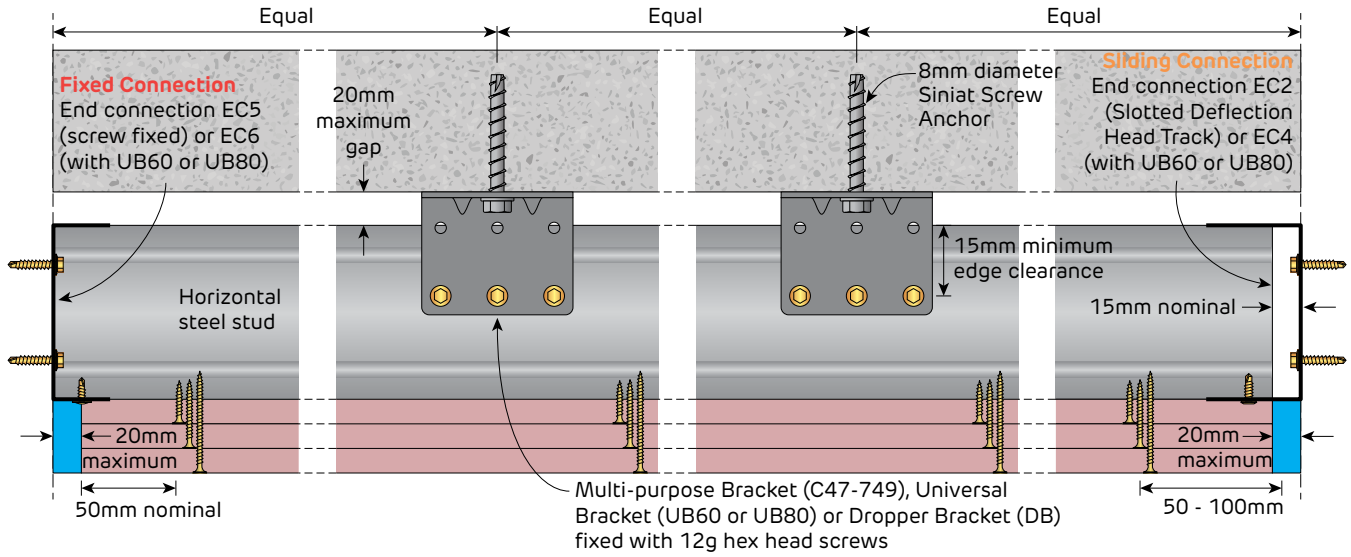


FIGURE 54 Stud Ceiling Type A4 - Fixed / Sliding
Elevation

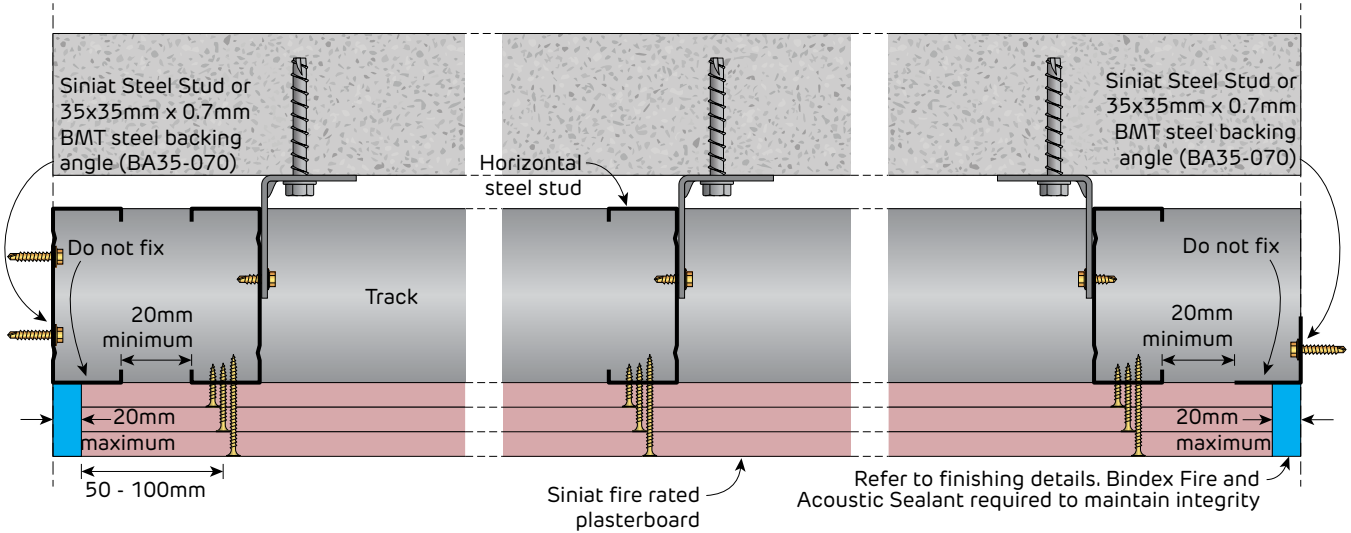
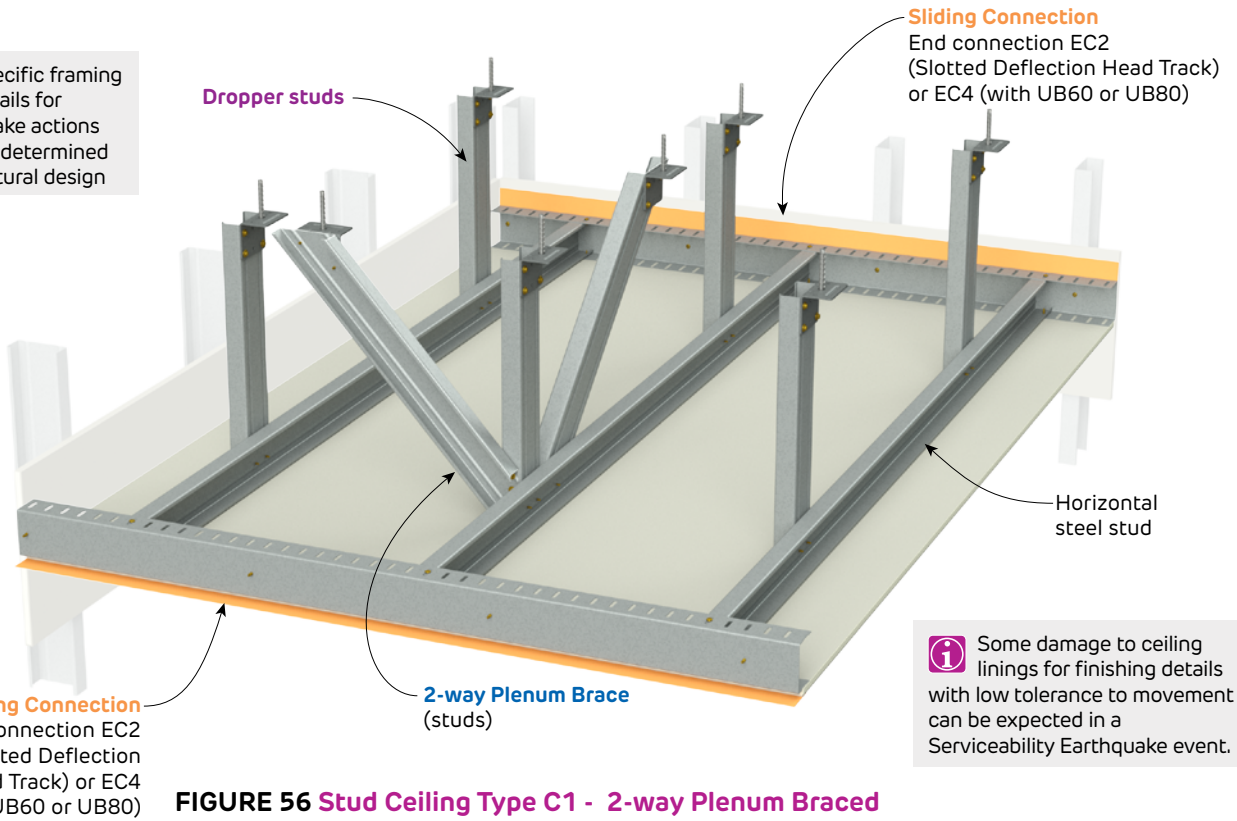


FIGURE 55 Stud Ceiling Type A4 - Edge Detail
Section

Fire Rated and Non-Fire Rated
Seismic Details for Stud Ceiling - Type C1 - 2-way Plenum Braced

i Specific framing details for earthquake actions must be determined by structural design



i Some damage to ceiling linings for finishing details with low tolerance to movement can be expected in a Serviceability Earthquake event.

FIGURE 56 Stud Ceiling Type C1 - 2-way Plenum Braced
Perspective

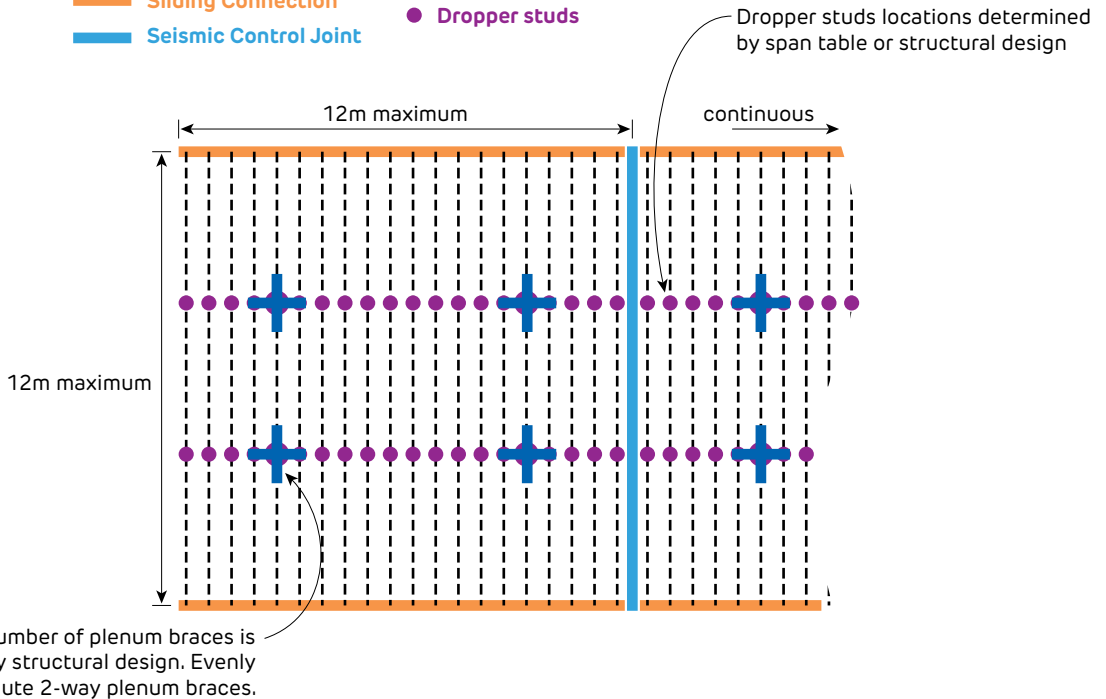
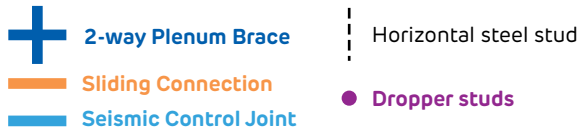


FIGURE 57 Stud Ceiling Type C1 - 2-way Plenum Braced
Plan



Non-Fire Rated

Seismic Details for Stud Ceiling - Type C1 - 2-way Plenum Braced

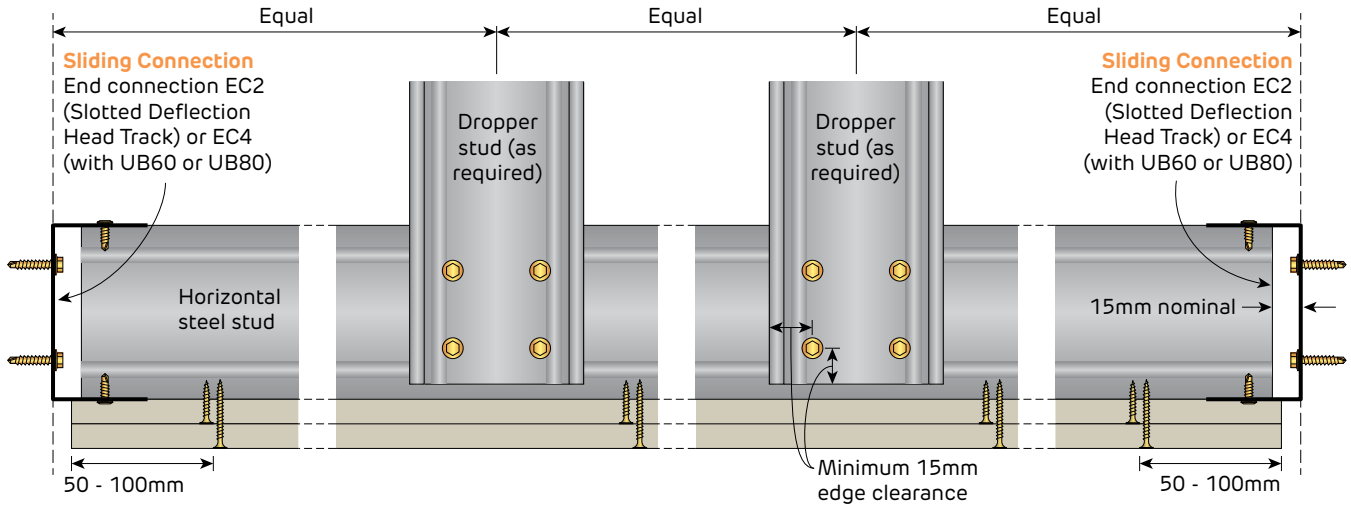


FIGURE 58 Stud Ceiling Type C1 - 2-way Plenum Braced
Elevation

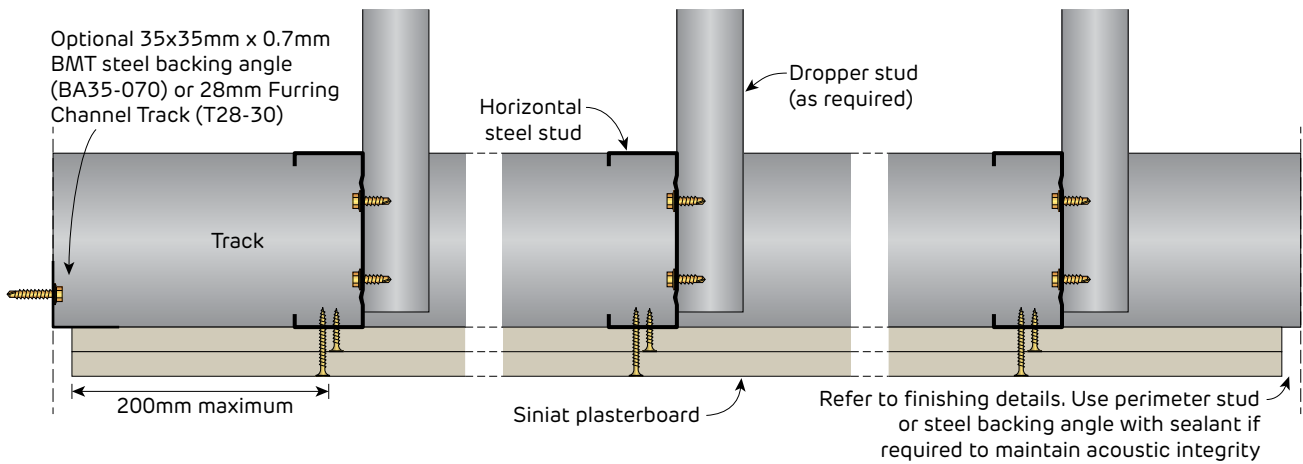


FIGURE 59 Stud Ceiling Type C1 - Edge Detail
Section



Fire Rated

Seismic Details for Stud Ceiling - Type C1 - 2-way Plenum Braced

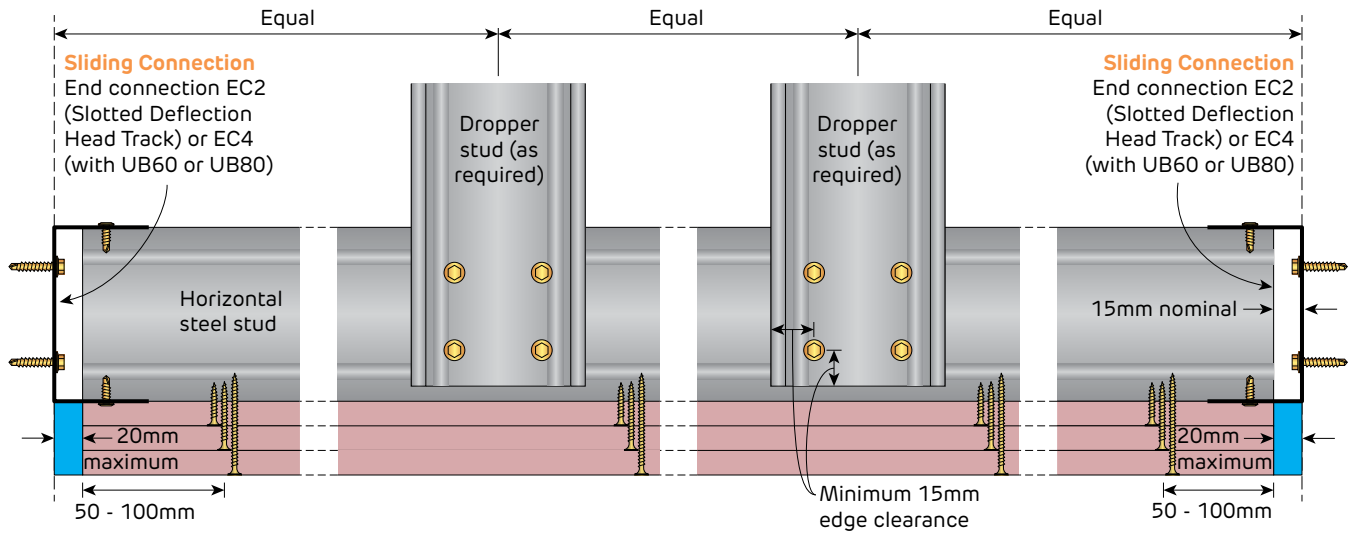


FIGURE 60 Stud Ceiling Type C1 - 2-way Plenum Braced
Elevation

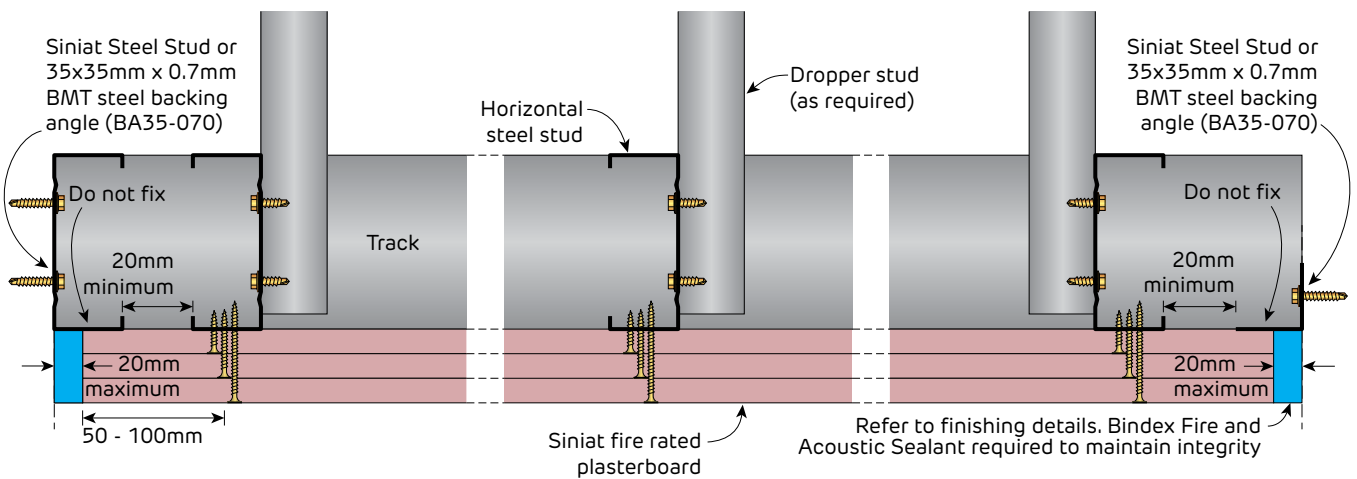


FIGURE 61 Stud Ceiling Type C1 - Edge Detail
Section



Fire Rated and Non-Fire Rated

Seismic Details for Stud and Batten Ceiling - Type C2 - 2-way Plenum Braced

i Specific framing details for earthquake actions must be determined by structural design

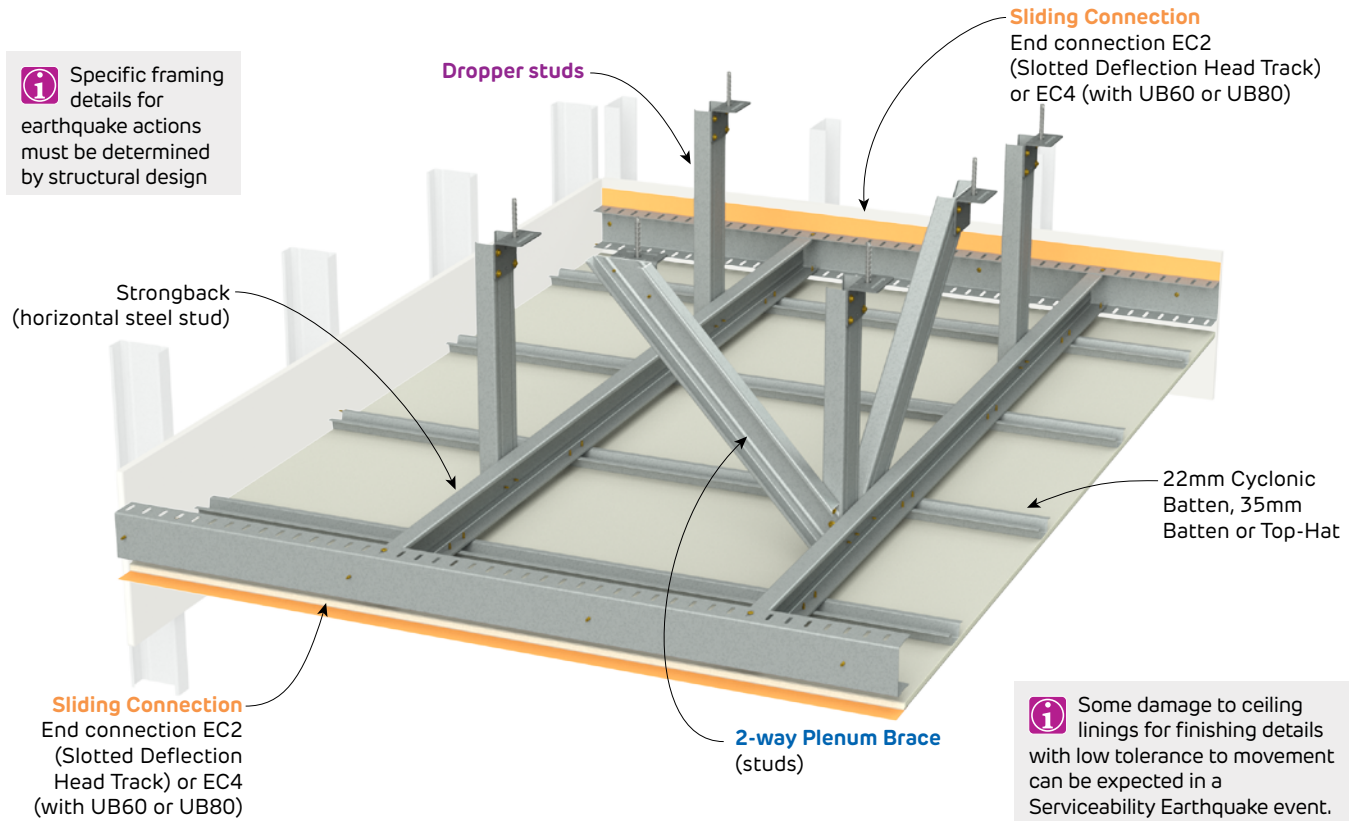
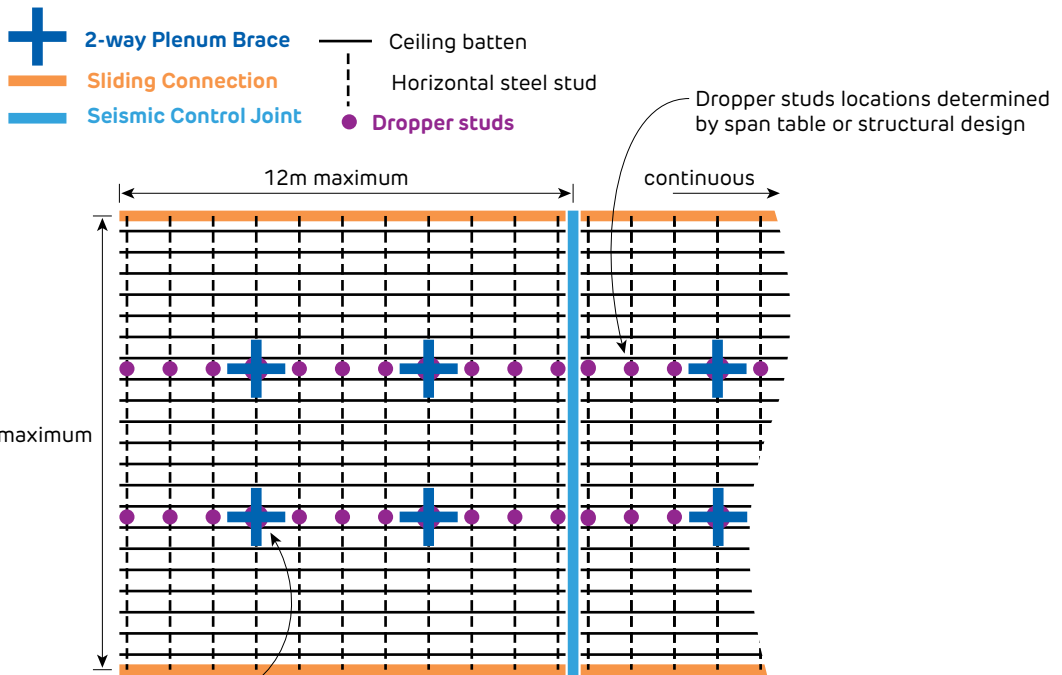


FIGURE 62 Stud Ceiling Type C2 - 2-way Plenum Braced
Perspective



The number of plenum braces is determined by structural design. Evenly distribute 2-way plenum braces.

FIGURE 63 Stud Ceiling Type C2 - 2-way Plenum Braced
Plan

Non-Fire Rated

Seismic Details for Stud and Batten Ceiling - Type C2 - 2-way Plenum Braced

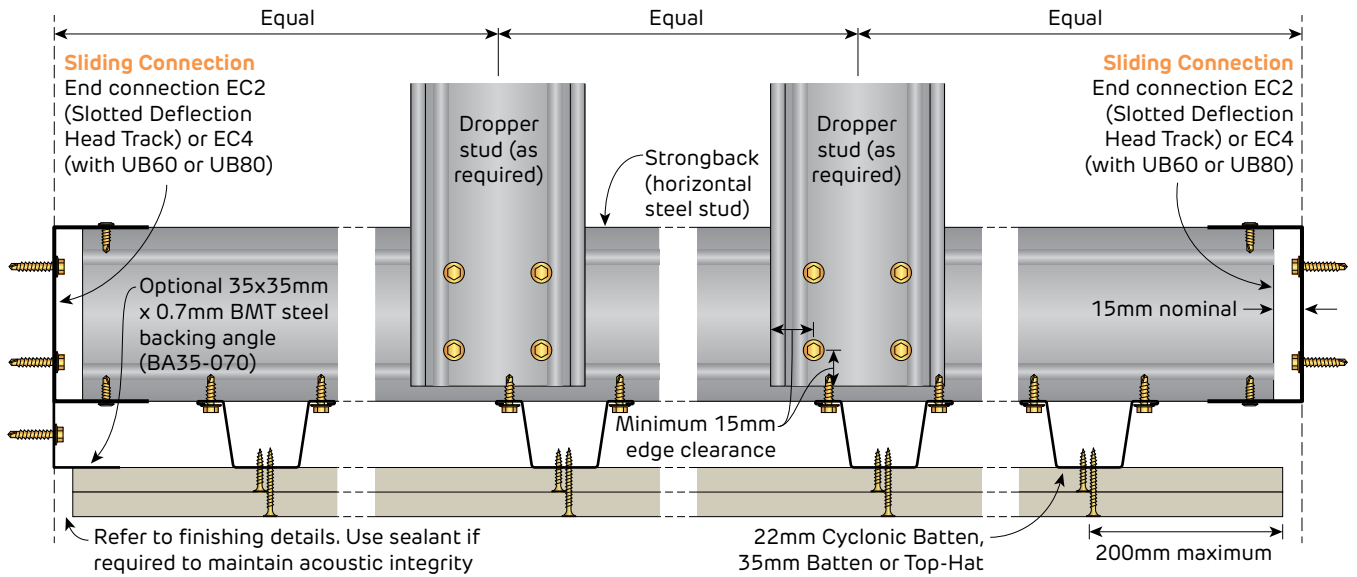


FIGURE 64 Stud Ceiling Type C2 - 2-way Plenum Braced
Elevation

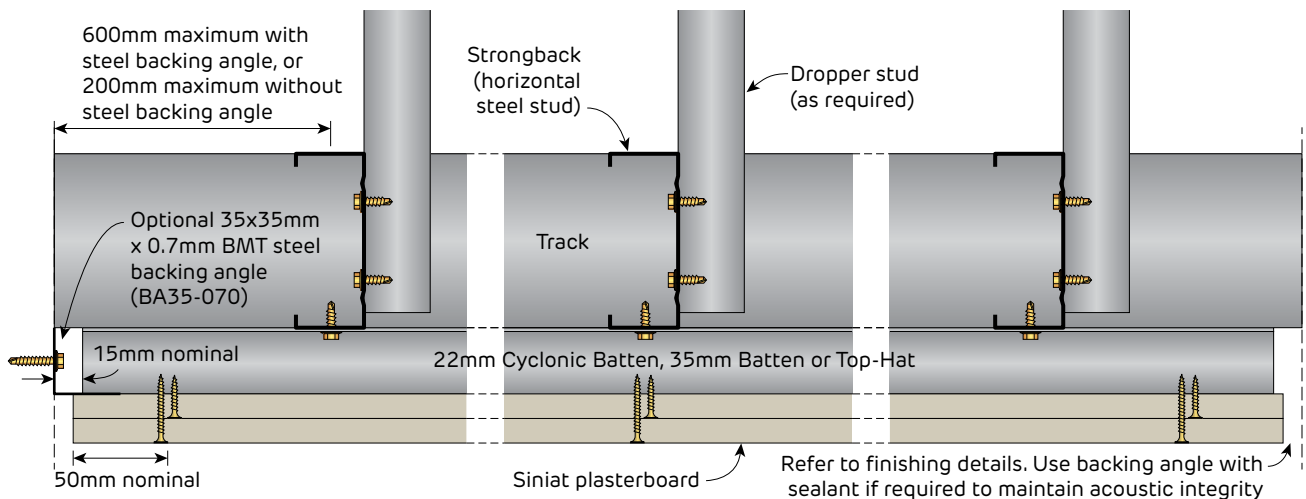


FIGURE 65 Stud Ceiling Type C2 - Batten End Detail
Section



Fire Rated

Seismic Details for Stud and Batten Ceiling - Type C2 - 2-way Plenum Braced

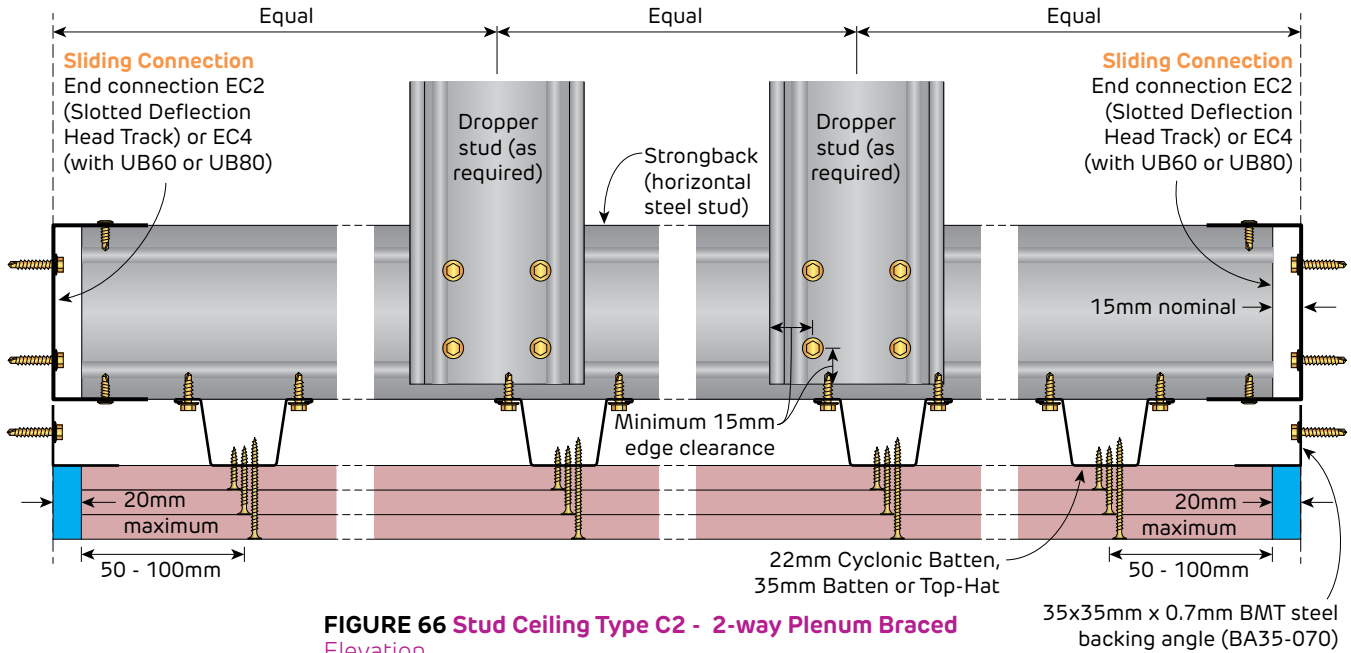


FIGURE 66 Stud Ceiling Type C2 - 2-way Plenum Braced
Elevation

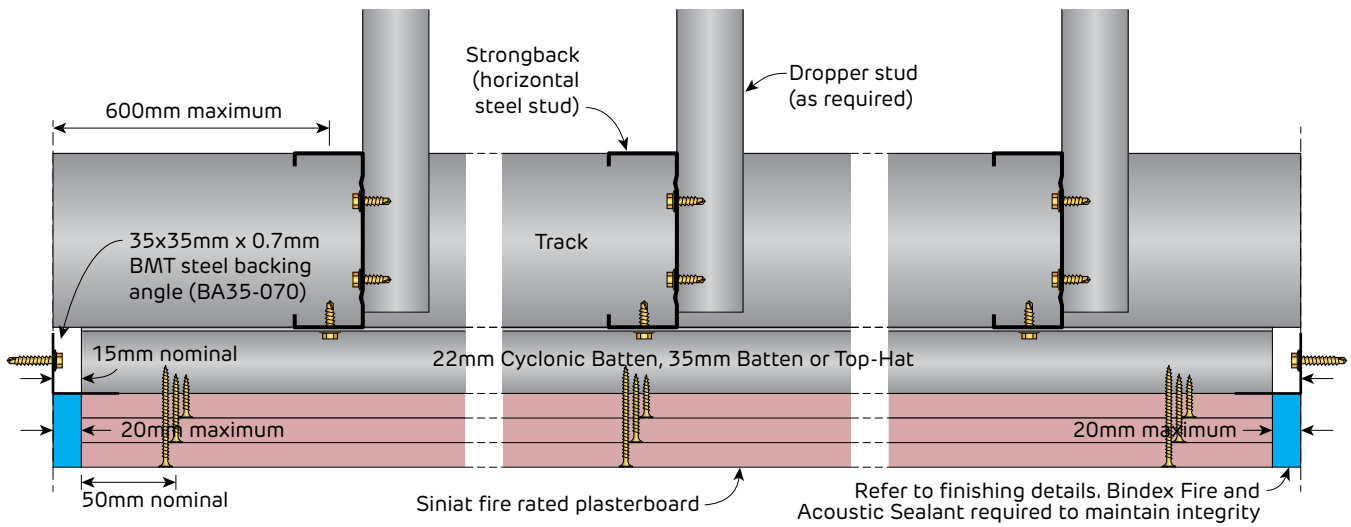


FIGURE 67 Stud Ceiling Type C2 - Batten End Detail
Section

**Fire Rated and Non-Fire Rated
2-way Plenum Brace**

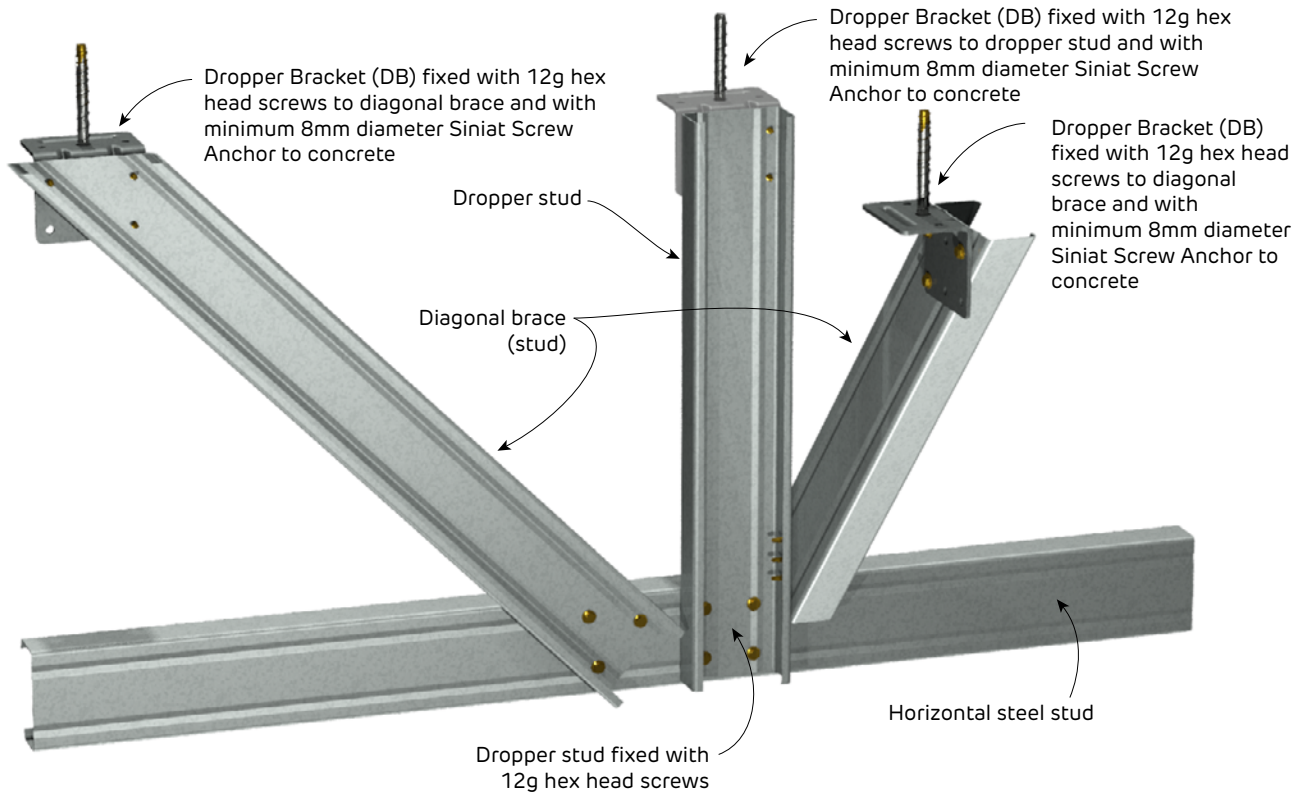


FIGURE 68 2-way Plenum Brace
Perspective

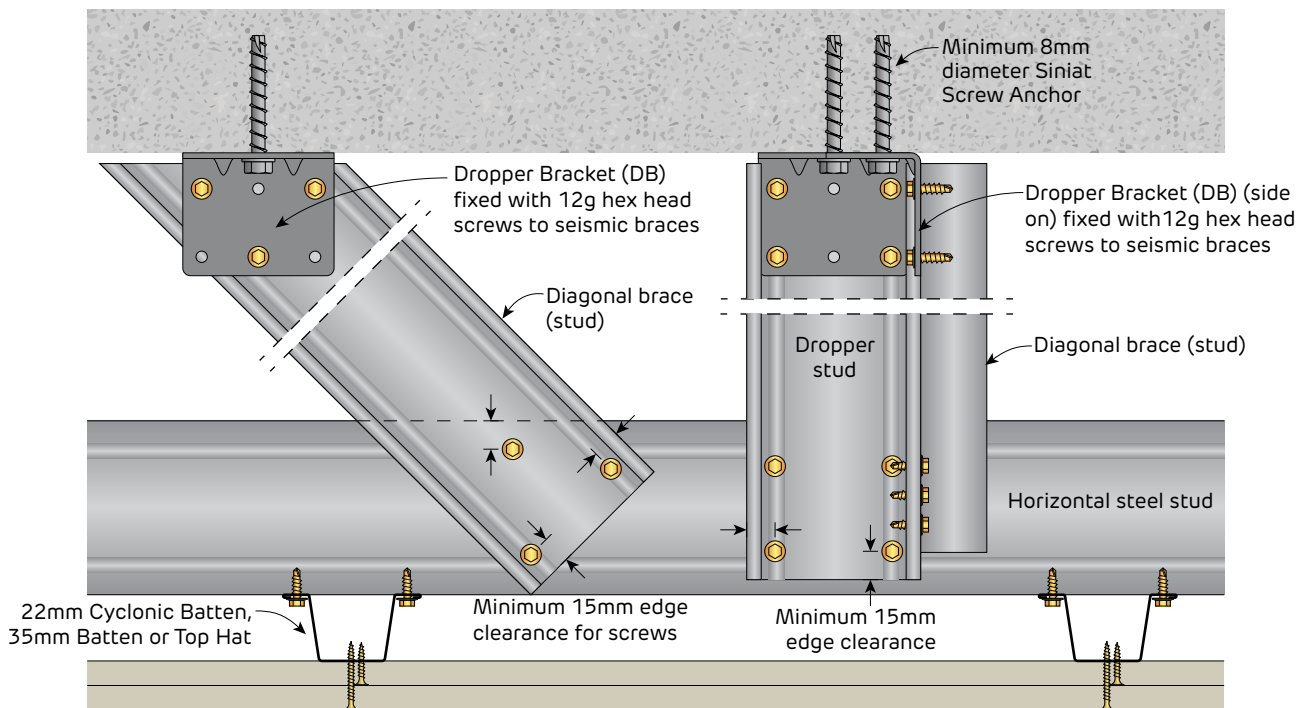


FIGURE 59 2-way Plenum Brace
Elevation



**Fire Rated and Non-Fire Rated
Horizontal Steel Stud Splicing**

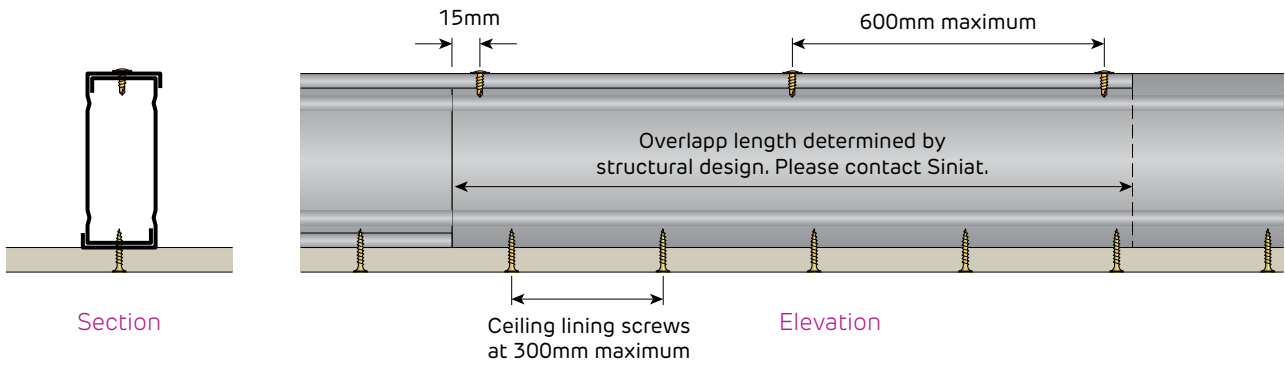


FIGURE 70 Splicing Horizontal Studs via Overlap Method

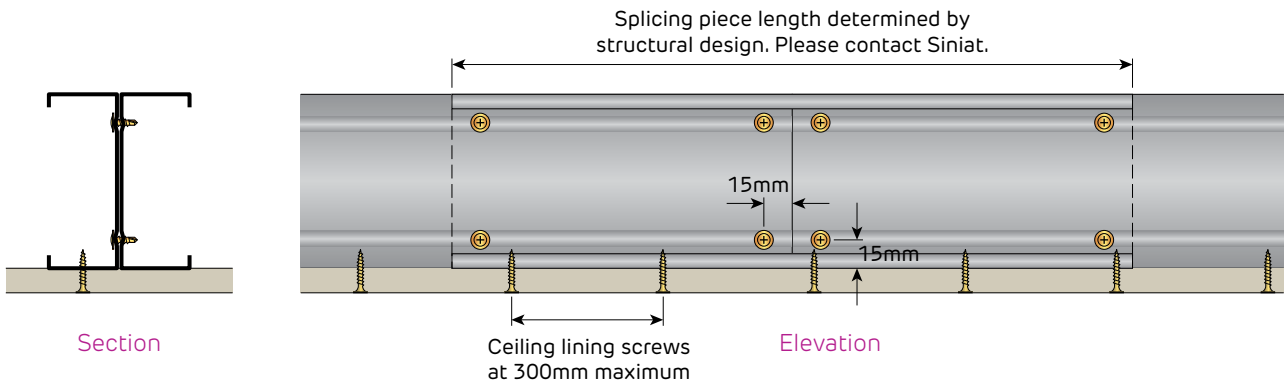


FIGURE 71 Splicing Horizontal Studs via Back-to-back Method

**Fire Rated
Steel Stud Ceilings**

For 1 layer, use minimum 35x35mm x 0.7mm BMT steel backing angle (BA35-070).
For 2 layers, use minimum 50x50mm x 0.7mm BMT steel backing angle (BA50-070).
For 3 layers, use minimum 75x75mm x 1.15mm BMT steel backing angle (BA75-115).

For 1 layer, use minimum 35x35mm x 0.7mm BMT steel backing angle (BA35-070).
For 2 layers, use minimum 50x50mm x 0.7mm BMT steel backing angle (BA50-070).
For 3 layers, use minimum 75x75mm x 1.15mm BMT steel backing angle (BA75-115).

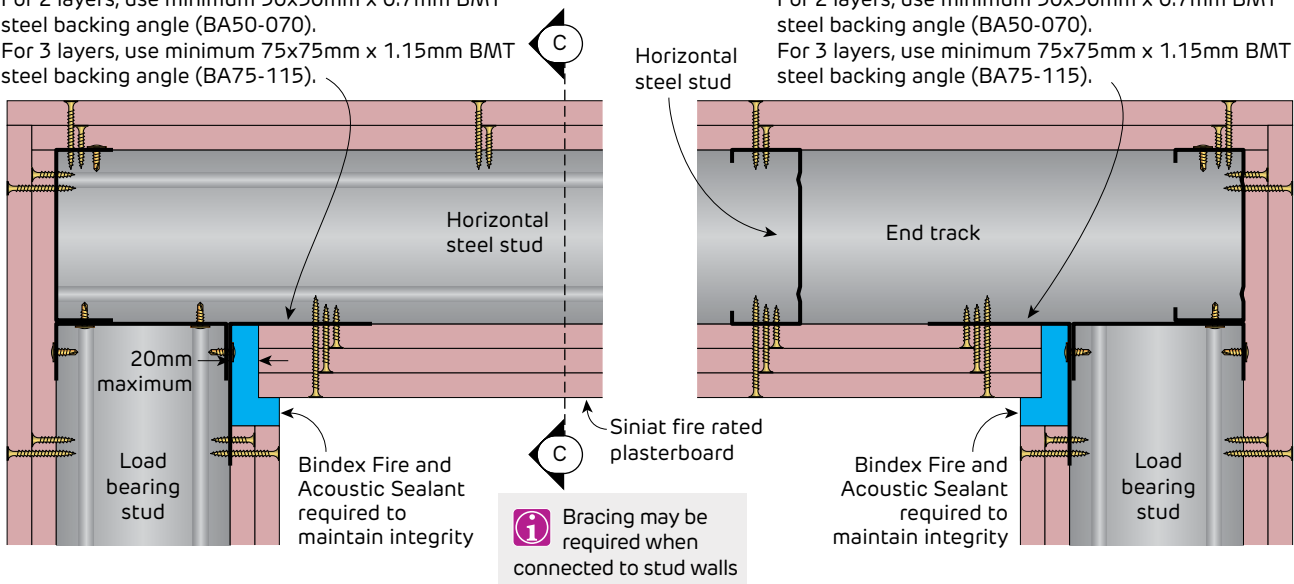
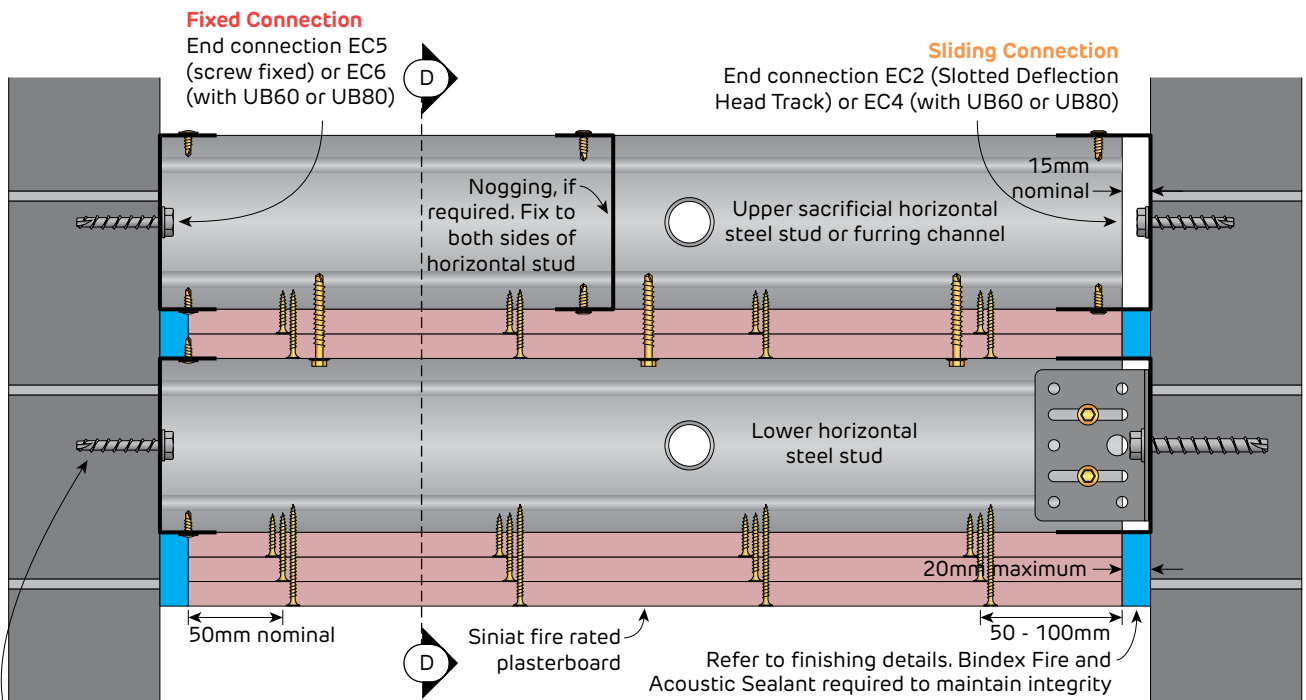


FIGURE 72 Ceiling End
Horizontal Steel Stud fixed to load bearing stud wall
Section

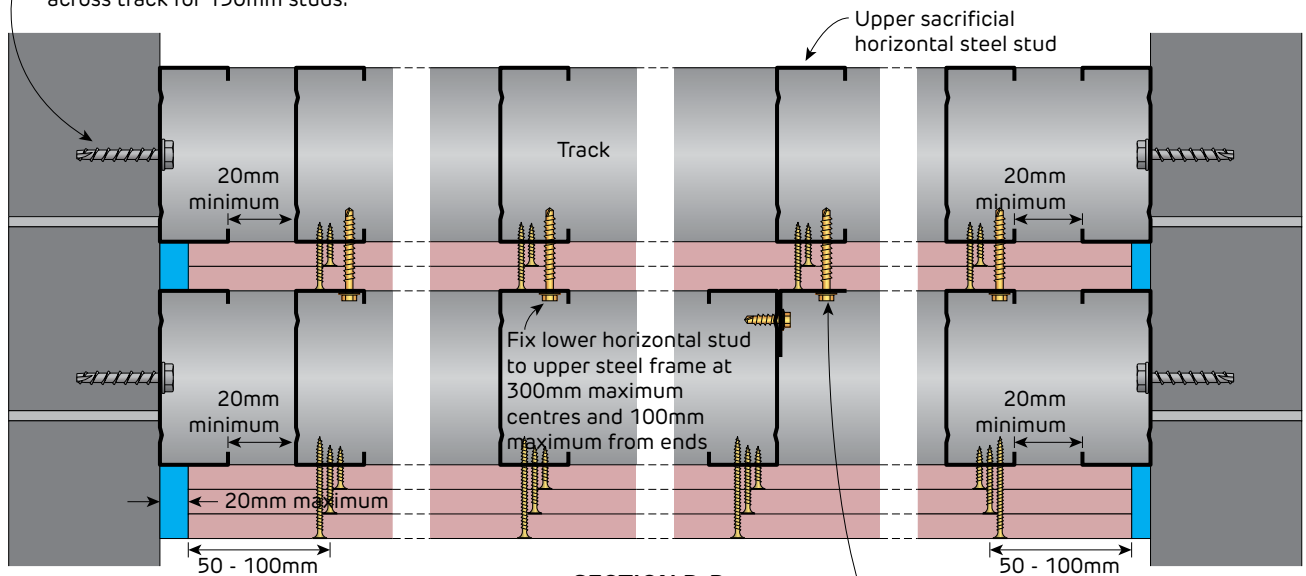
SECTION C-C Ceiling End
Horizontal Steel Stud fixed to load bearing stud wall
Section

Fire Rated
Steel Stud Ceilings - Built From the Underside

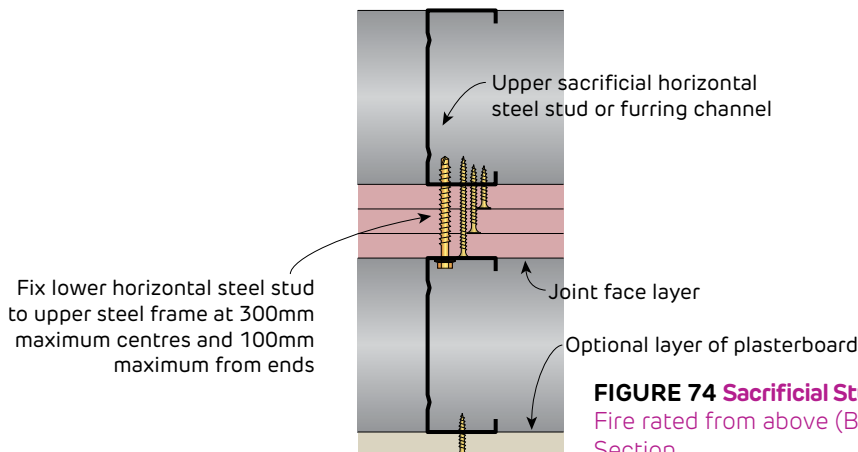


Siniat Screw Anchor.
Use a single anchor for up to 92mm studs and 2 anchors across track for 150mm studs.

FIGURE 73 Sacrificial Stud Ceiling
Fire rated from above and below (Built from underside)
Section



SECTION D-D
Section



Alternative fixing method. Fix 35x35mm x 0.7mm BMT steel angle to both frames at 300mm maximum centres and 100mm maximum from ends

FIGURE 74 Sacrificial Stud Ceiling
Fire rated from above (Built from underside)
Section



Fire Rated
Steel Stud Ceilings - Built From the Underside

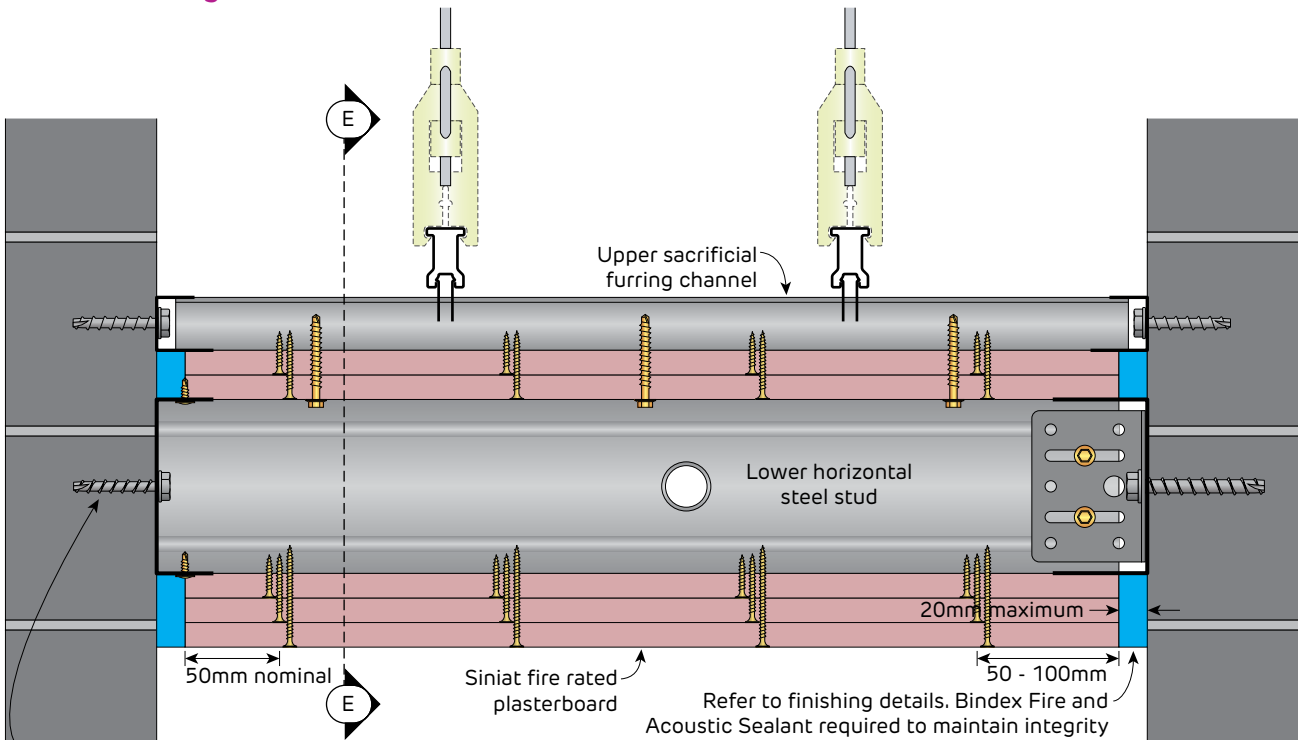
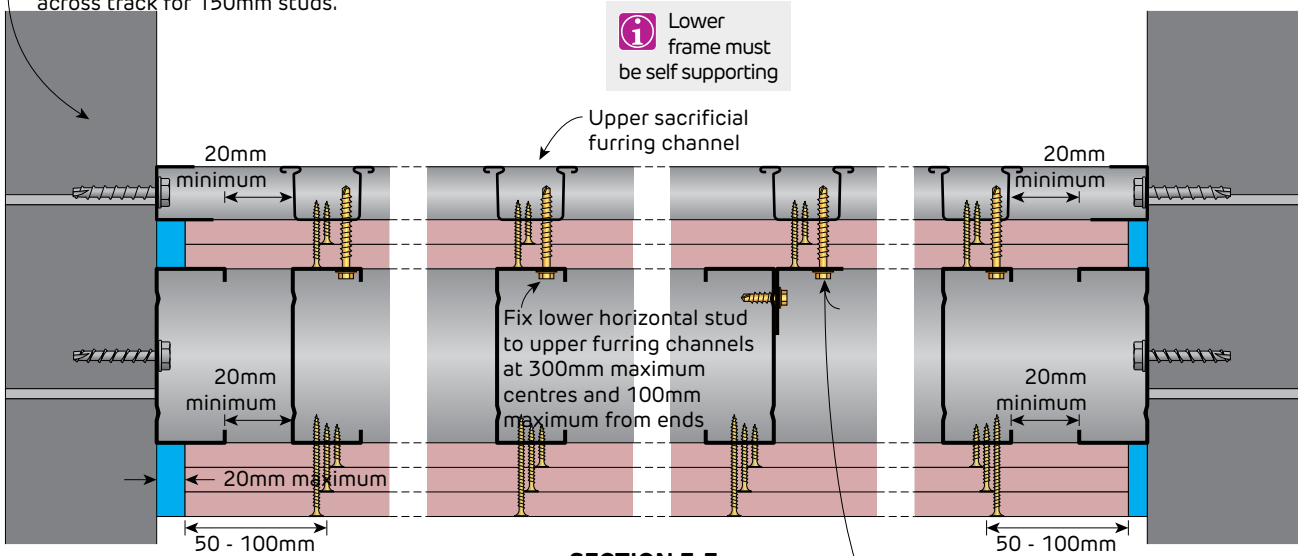


FIGURE 75 Sacrificial Stud Ceiling
Fire rated from above and below (Built from underside)
Section

Siniat Screw Anchor.
Use a single anchor for up to 92mm studs and 2 anchors across track for 150mm studs.



SECTION E-E
Section

i Lower frame must be self supporting

Alternative fixing method.
Fix 35x35mm x 0.7mm BMT steel angle to both stud and furring channel at 300mm maximum centres and 100mm maximum from ends

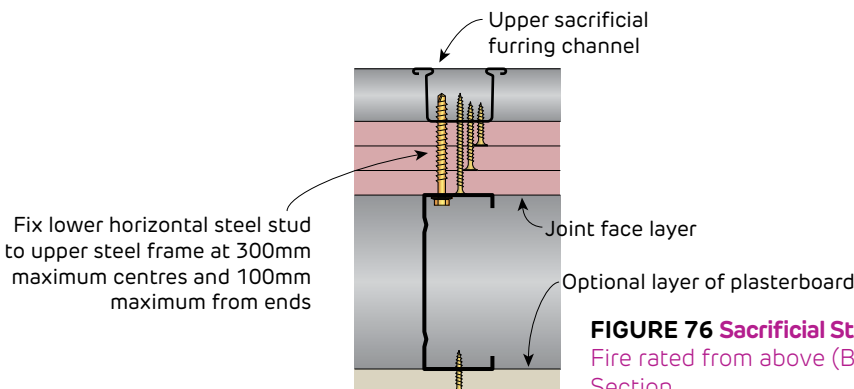


FIGURE 76 Sacrificial Stud Ceiling
Fire rated from above (Built from underside)
Section

**Non-Fire Rated
Steel Stud Bulkheads**

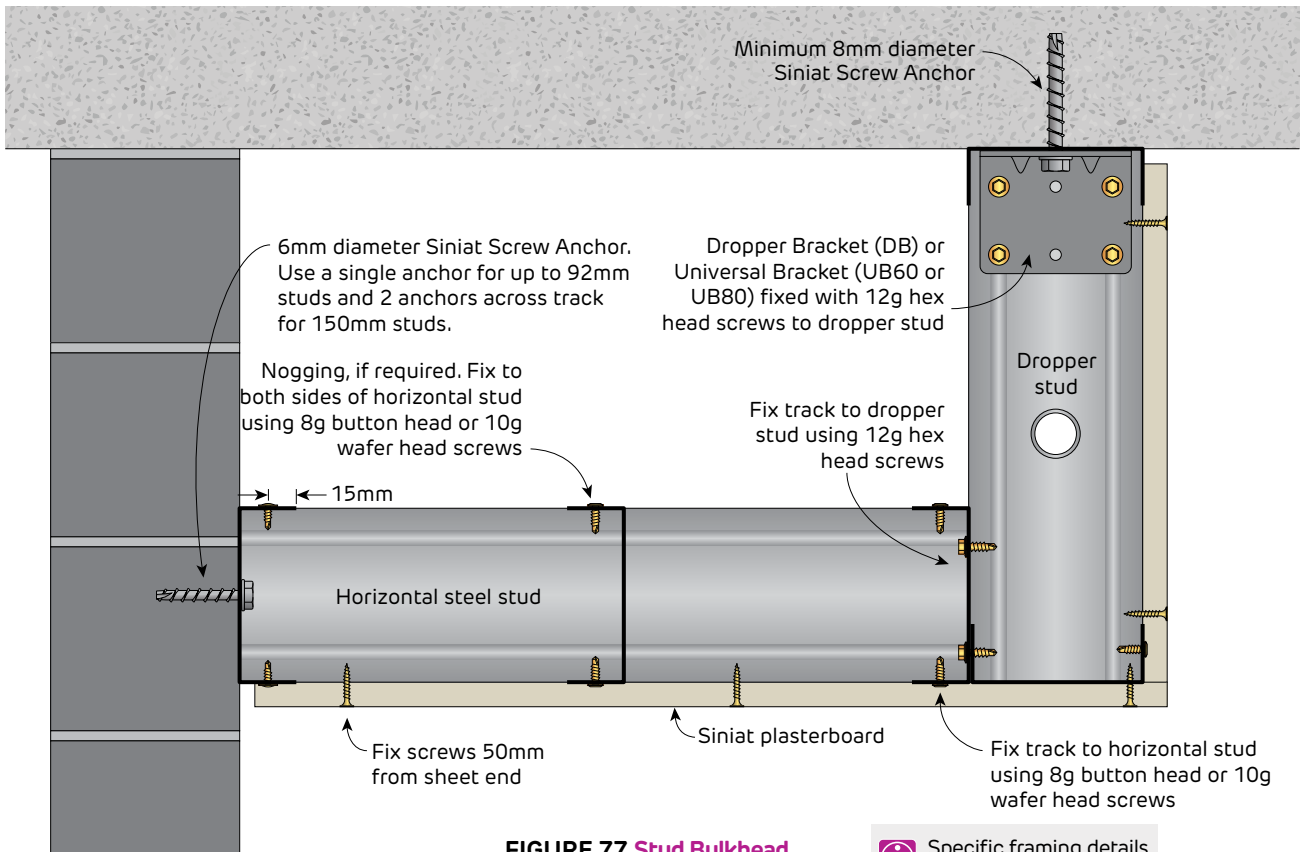


FIGURE 77 Stud Bulkhead Section

i Specific framing details must be determined by structural design

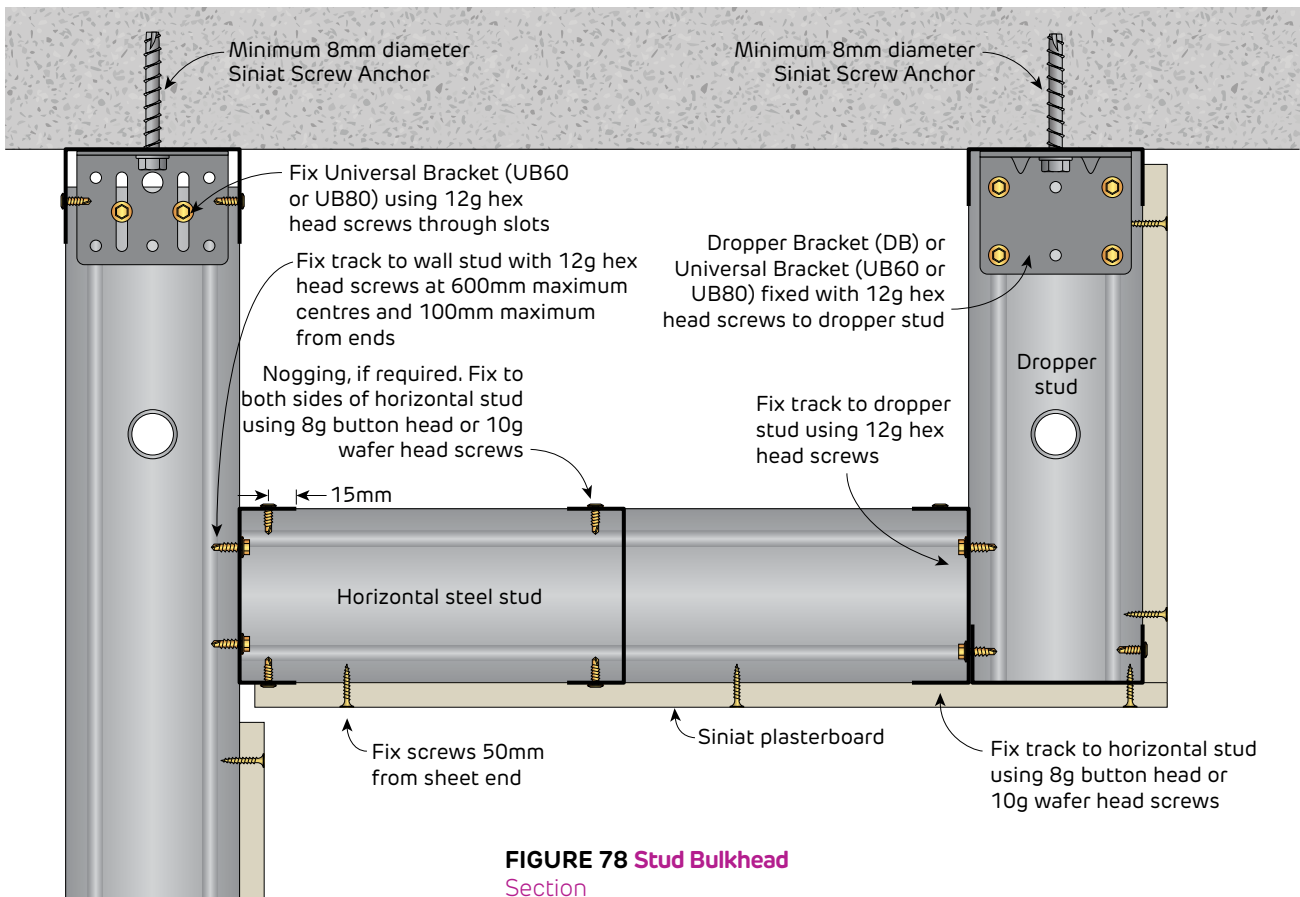
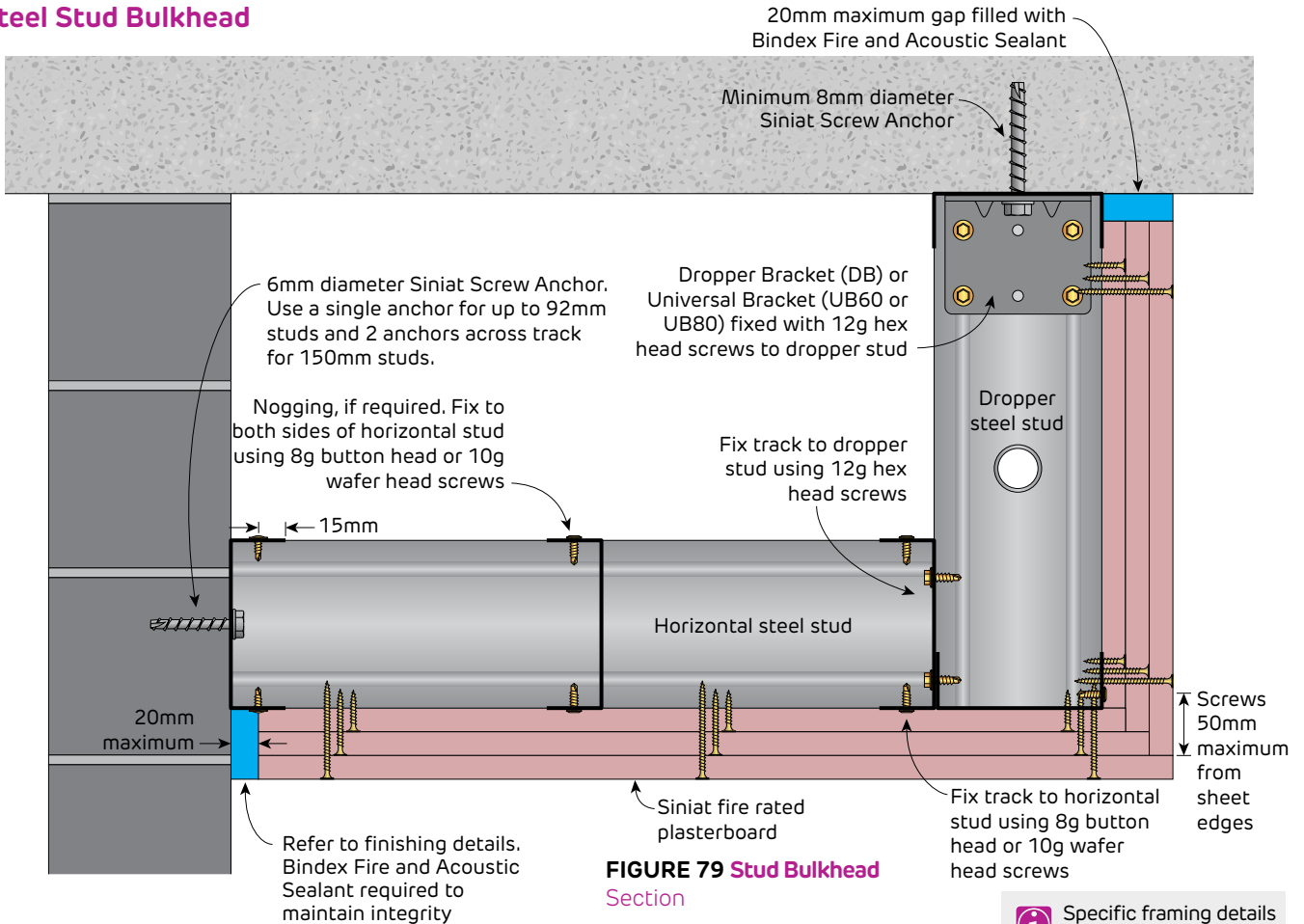


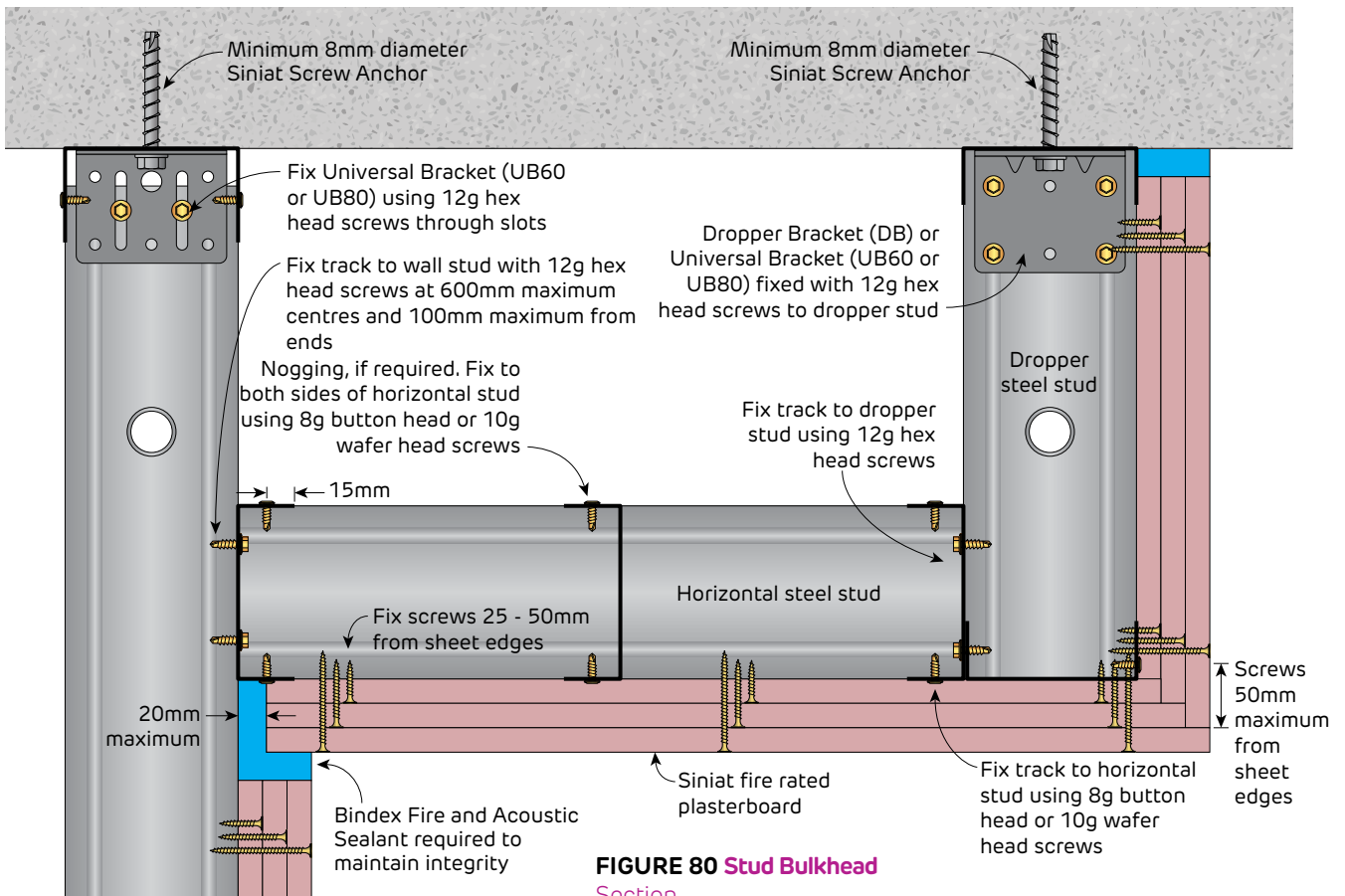
FIGURE 78 Stud Bulkhead Section



Fire Rated
Steel Stud Bulkhead



i Specific framing details must be determined by structural design



**Fire Rated and Non-Fire Rated
Steel Stud Bulkhead**

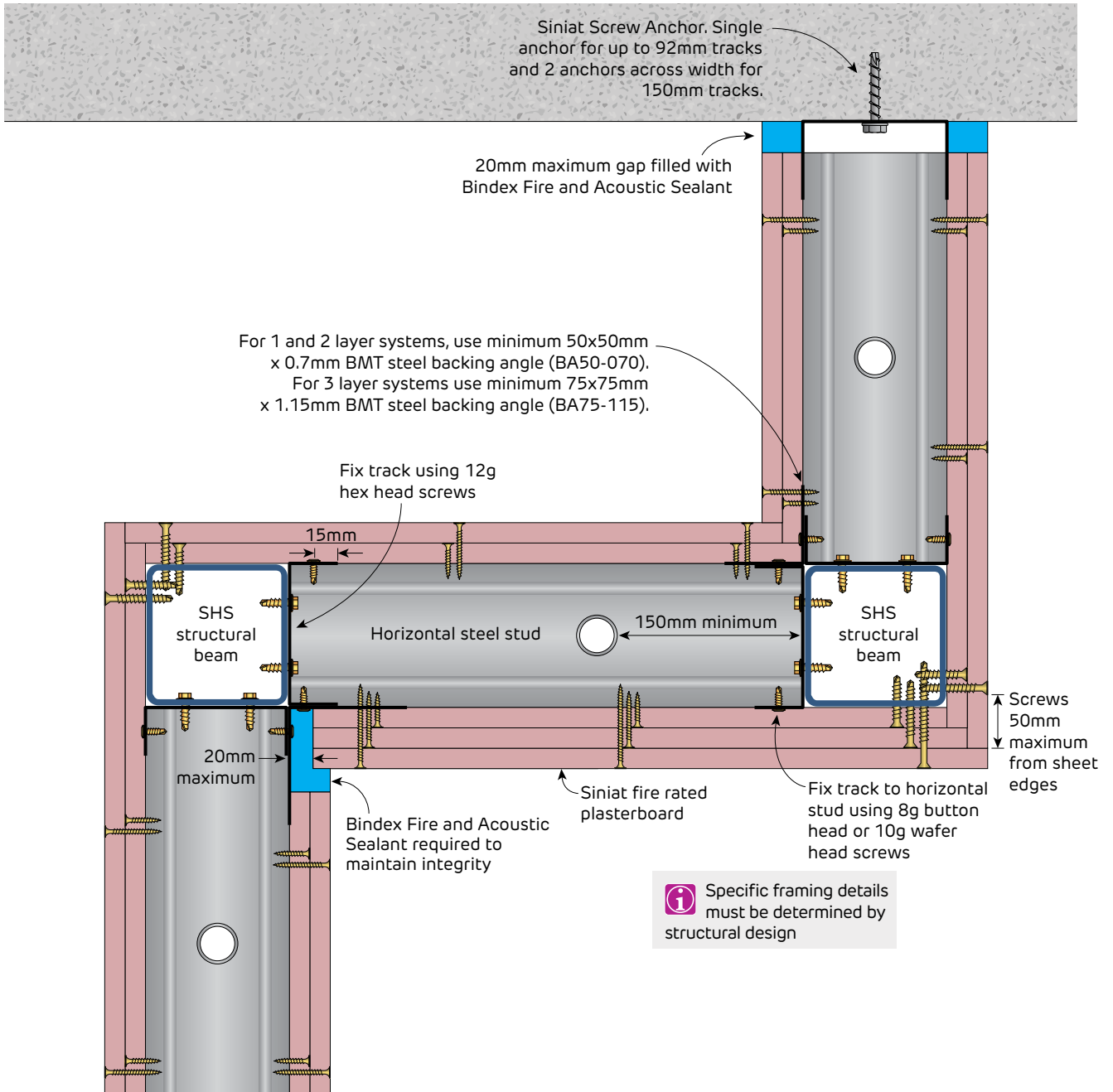


FIGURE 81 Stud Wall with Integrated Bulkhead
Section

**Suggested Sizing of Structural Members in
Steel Stud Plasterboard Walls and Ceilings**

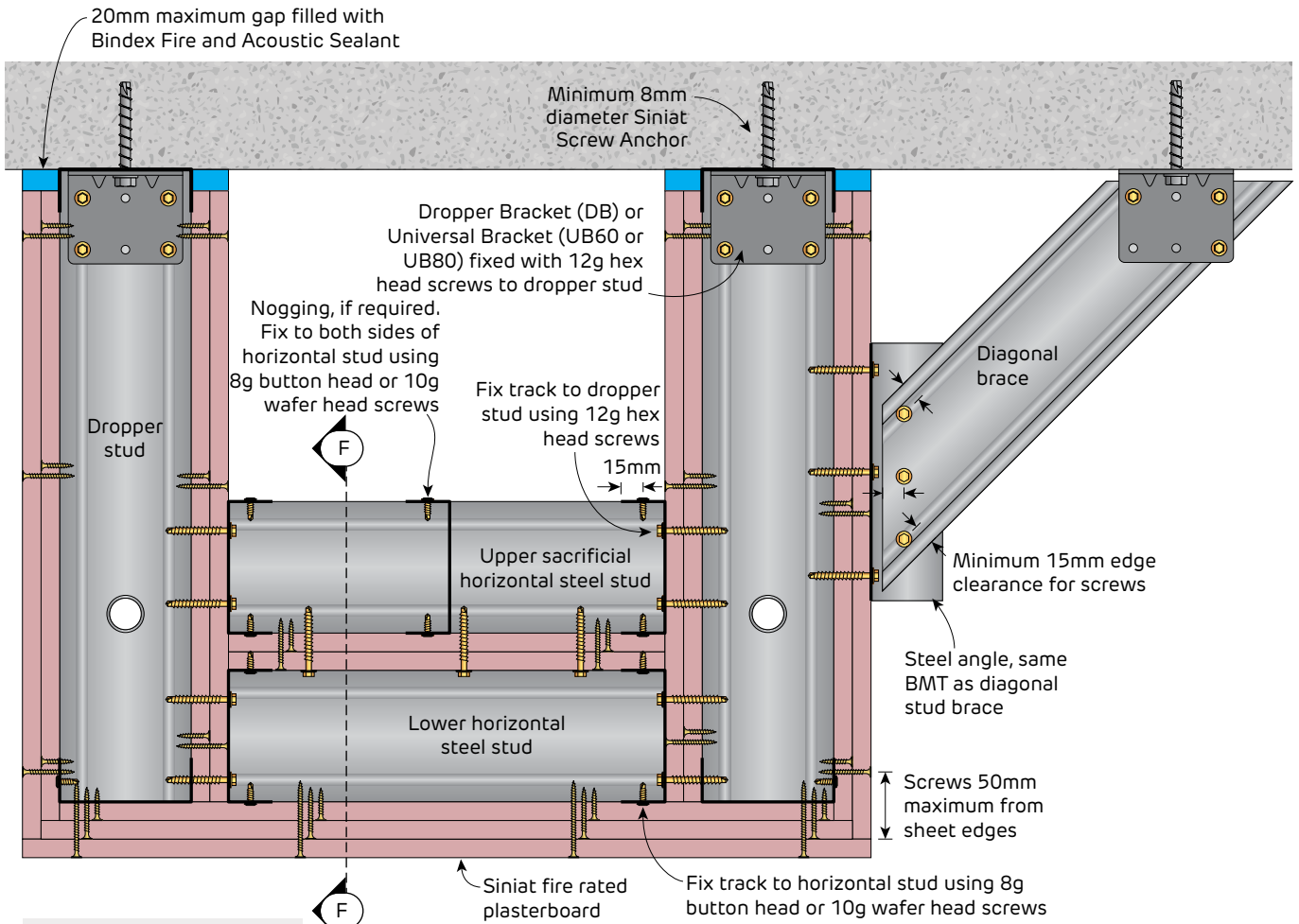
Stud Size (mm)	Structural Members
76	75x75 SHS
92	90x90 SHS
150	150x150 SHS



Fire Rated

Steel Stud Bulkheads - Fire Rated from Both Directions

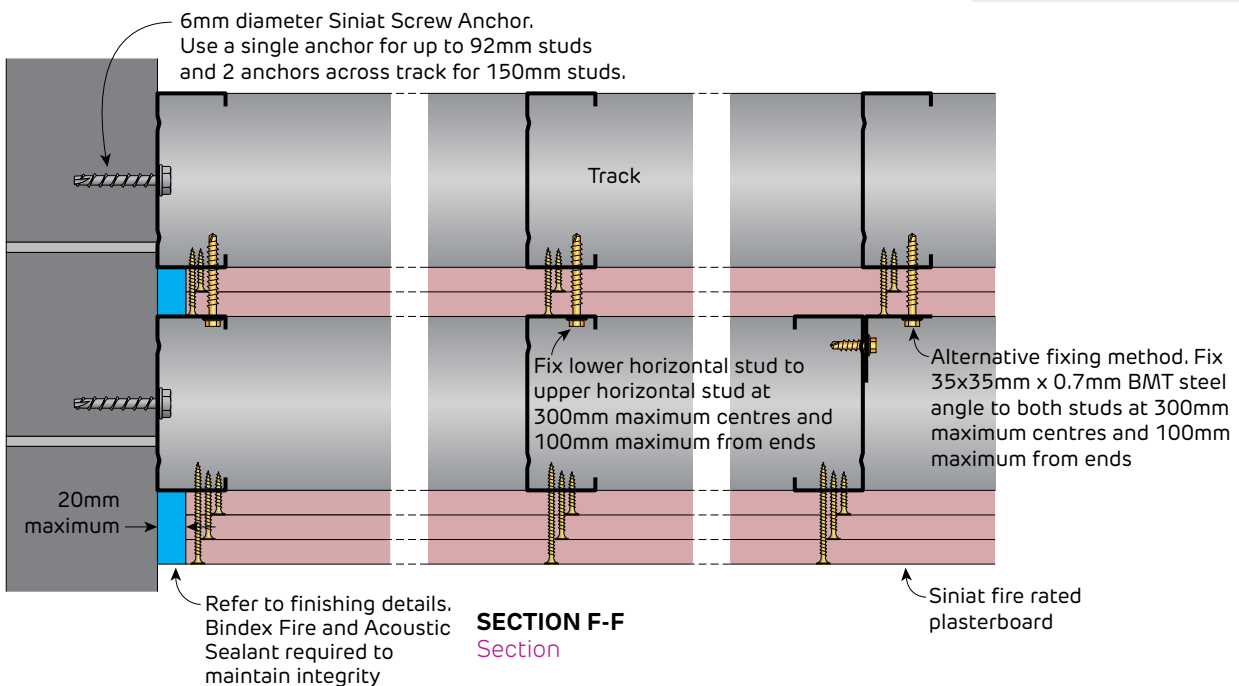
Using Wall Systems SSW312 or SSW317 with Ceiling Systems SSC2 or SSC3



i Specific framing details must be determined by structural design

FIGURE 82 Stud Bulkhead
Fire rated from both directions
Section

i Screws to be minimum 15mm from steel profile ends and edges

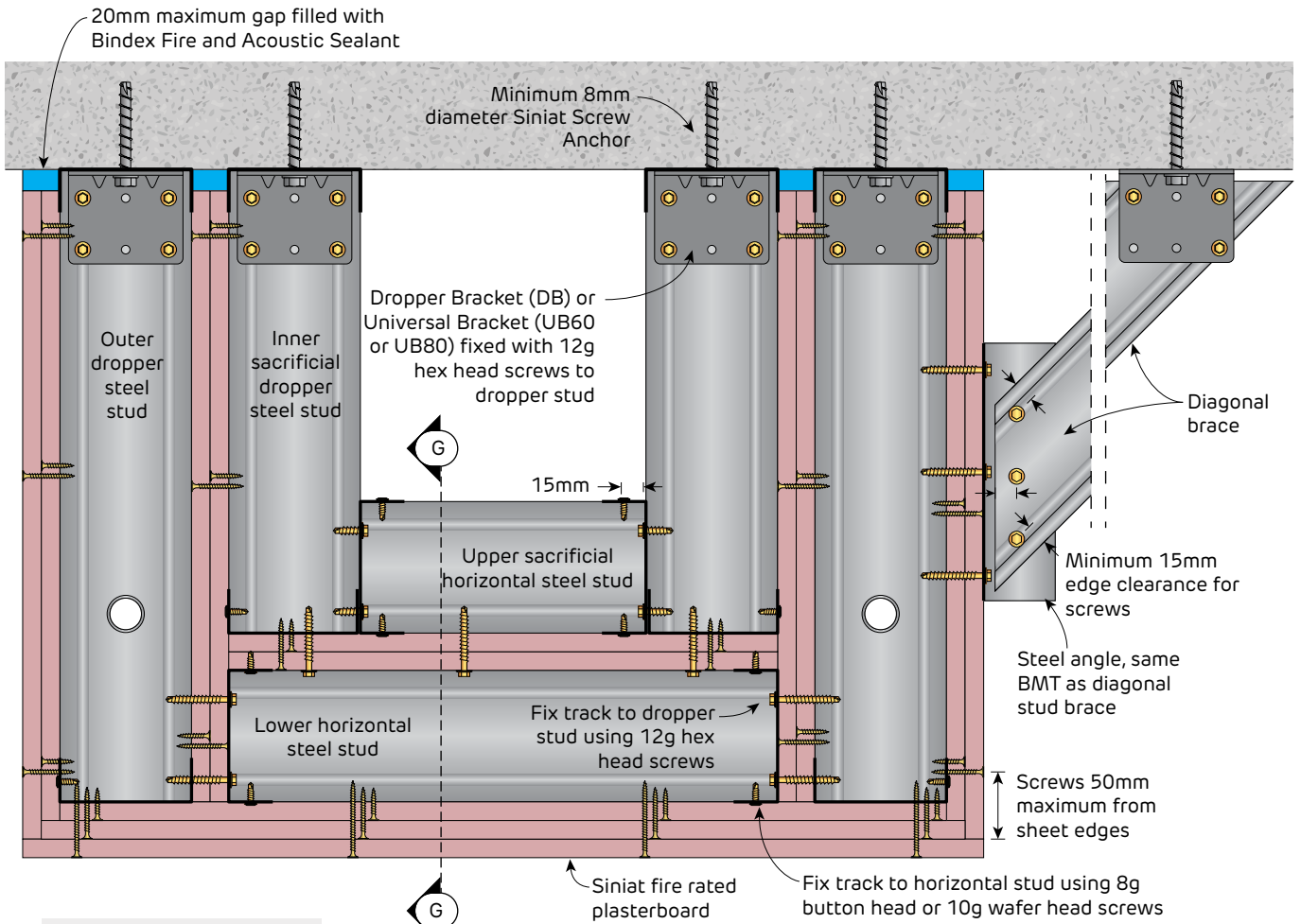


SECTION F-F
Section

Fire Rated

Steel Stud Bulkheads - Fire Rated from Both Directions

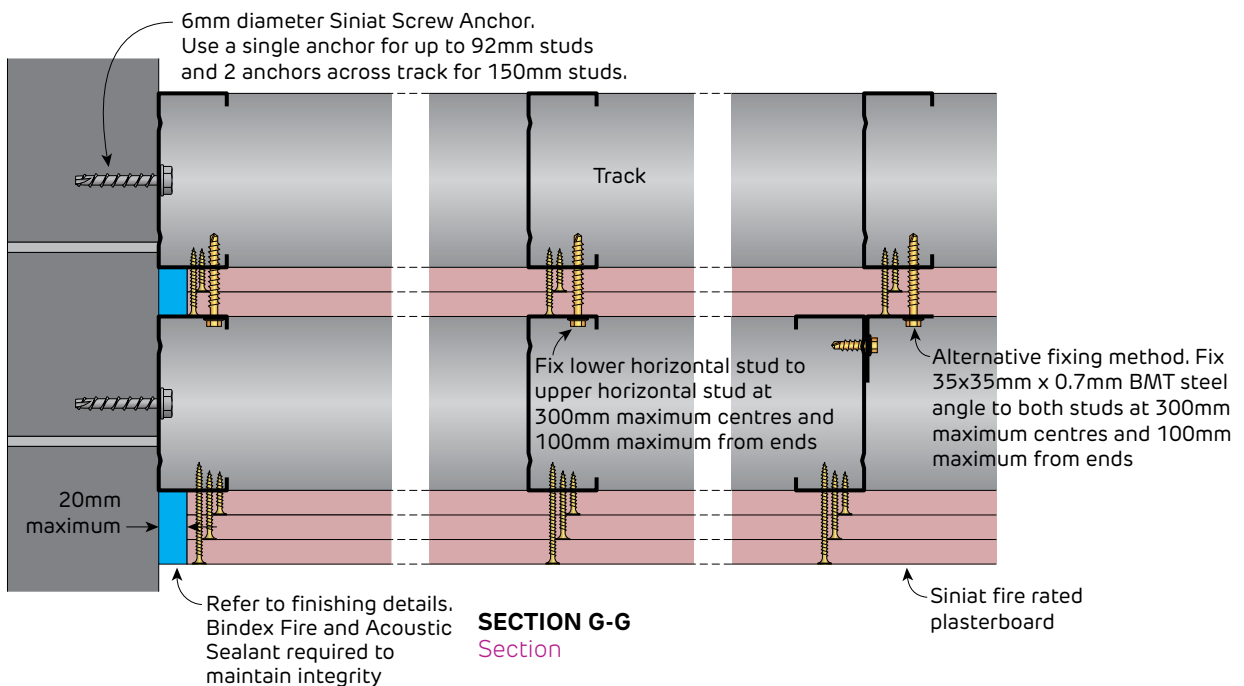
Using Wall Systems SSW312 or SSW317 with Ceiling Systems SSC2 or SSC3



i Specific framing details must be determined by structural design

FIGURE 83 Stud Bulkhead
Fire rated from both directions (Built from outside only)
Section

i Screws to be minimum 15mm from steel profile ends and edges



SECTION G-G
Section



Fire Rated

Steel Stud Bulkheads - Fire Rated from Both Directions

Using Wall Systems SSW312 or SSW317 with Ceiling Systems SHC3 or SHC4

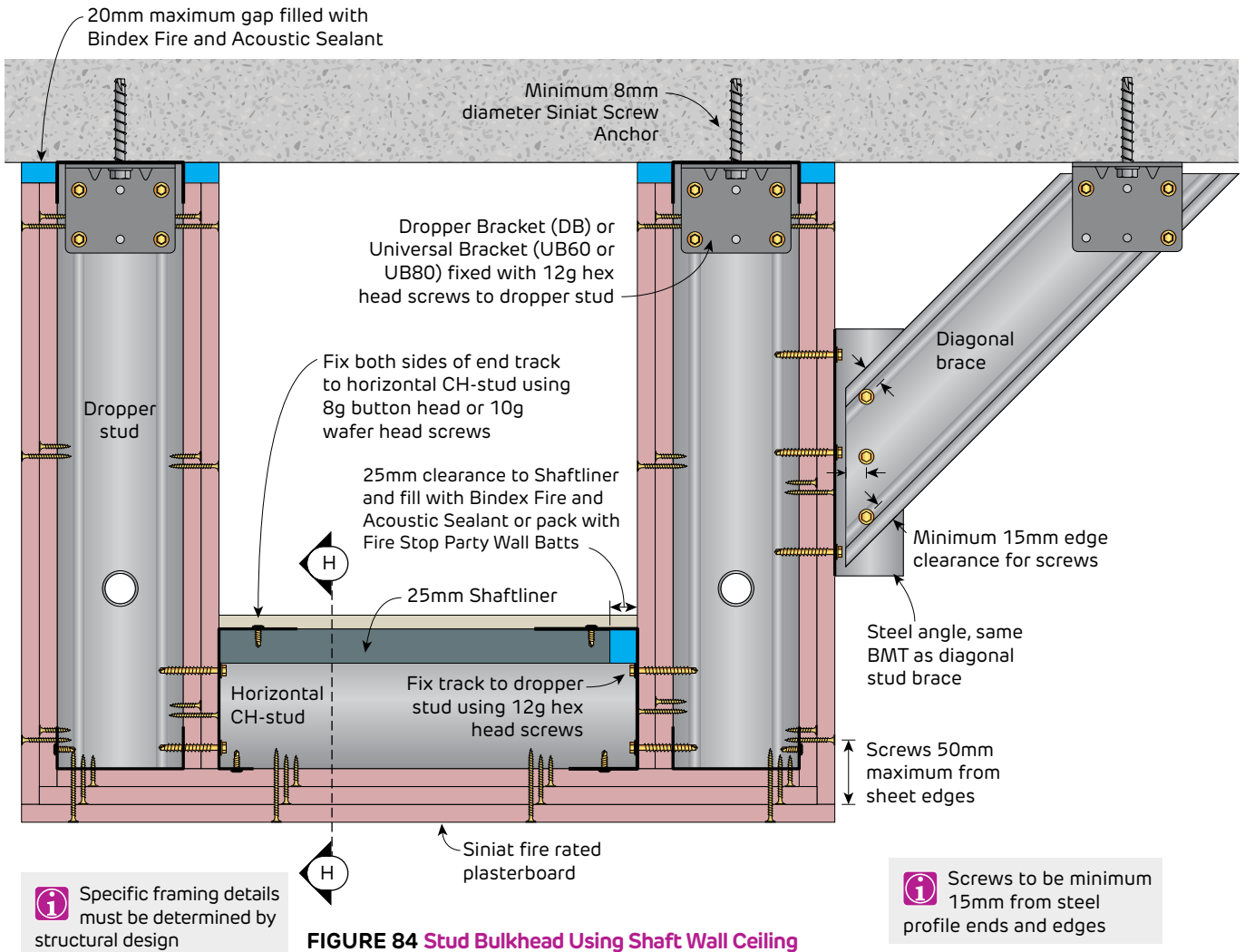
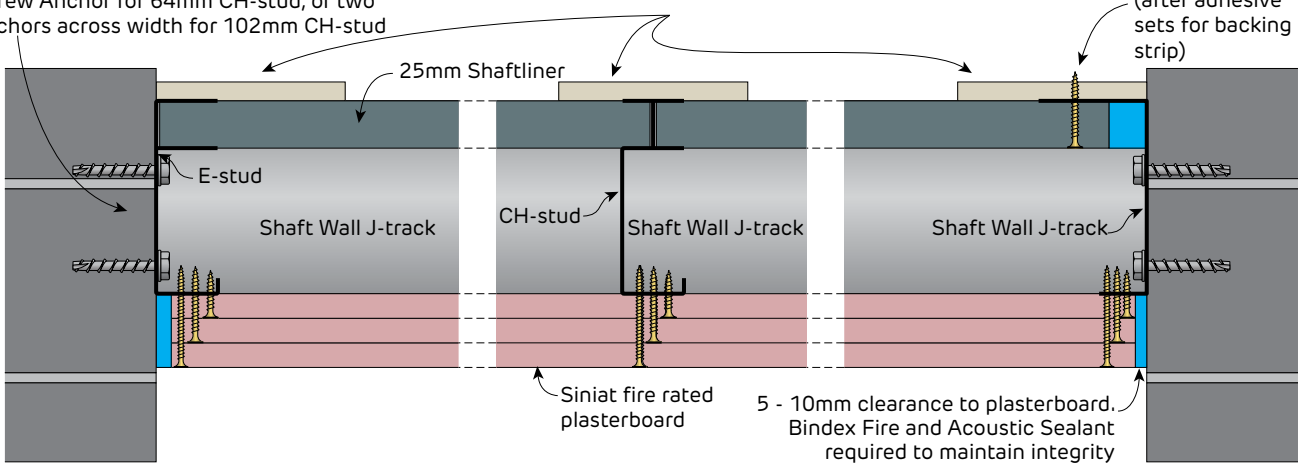


FIGURE 84 Stud Bulkhead Using Shaft Wall Ceiling
Fire rated from both directions (Built from outside only)
Section

Fix E-stud and J-track to substrate at 600mm maximum centres and 100mm maximum from ends. Use single 6mm diameter Siniat Screw Anchor for 64mm CH-stud, or two anchors across width for 102mm CH-stud

For System SHC4 only, use Mastablock or cornice cement to adhere an additional 100mm strip of any 10mm minimum plasterboard over exposed flange in CH-joist, E-stud and J-track

Fix Shaftliner to J-track at 200mm maximum centres (after adhesive sets for backing strip)



SECTION H-H
Section



Fire Rated
Steel Stud Raked Ceiling

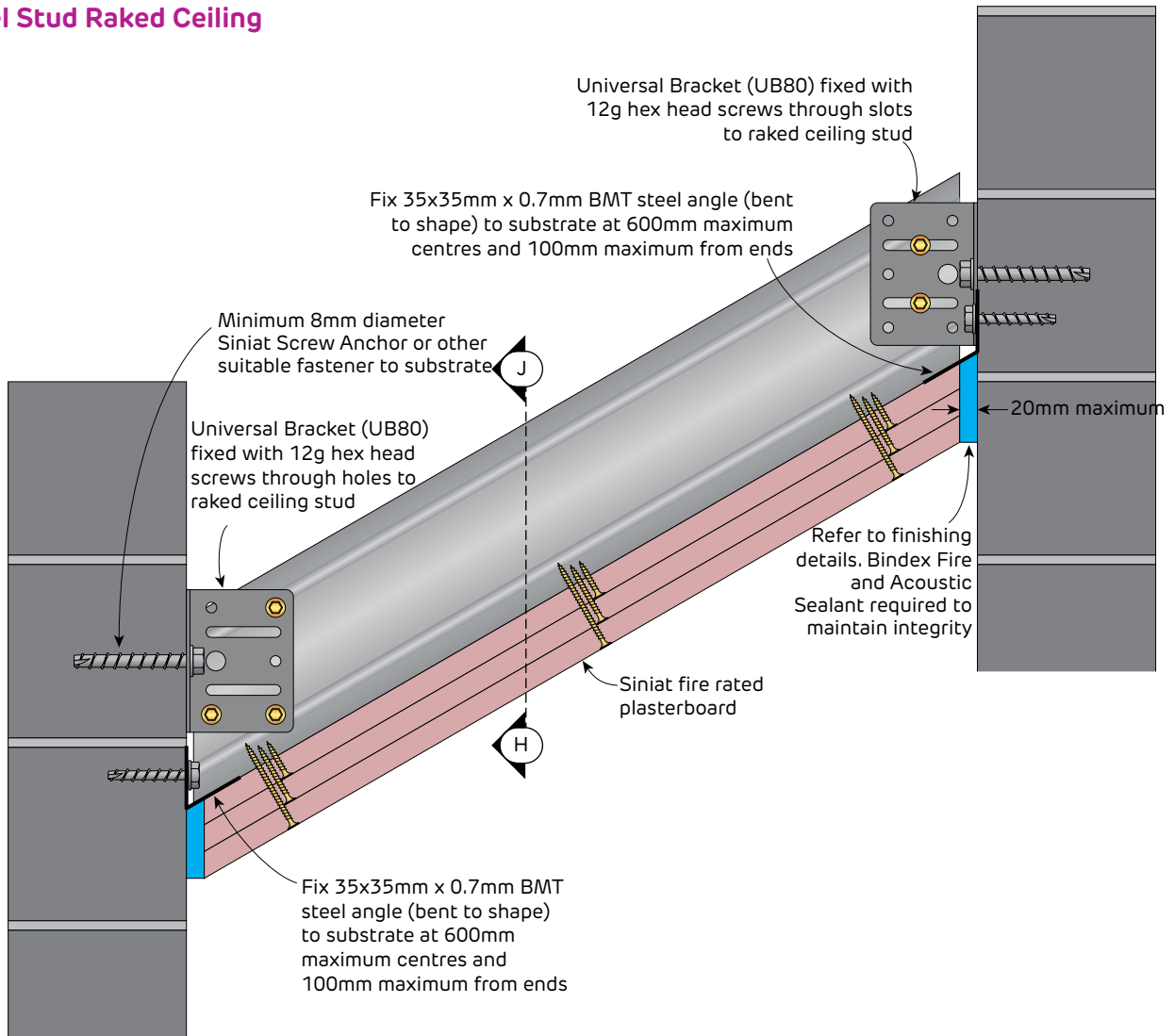
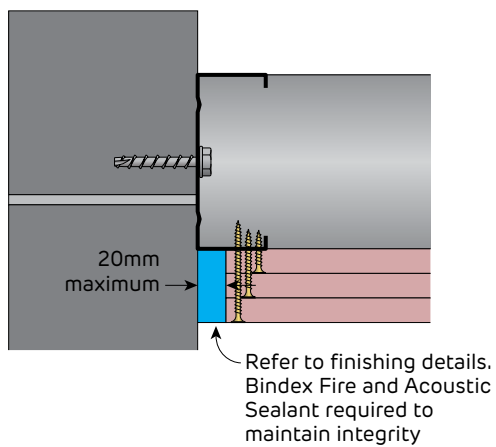


FIGURE 85 Raked Ceiling
Fire rated from below side only
Section



SECTION J-J
Section



Non-Fire Rated

Ceiling Perimeter Finishing Details

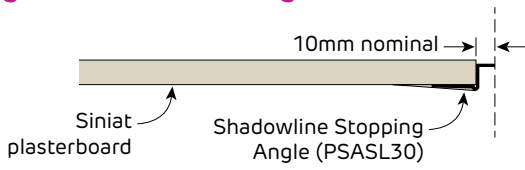


FIGURE 86 Finishing Detail - Shadowline Section

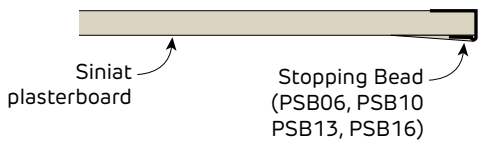


FIGURE 88 Finishing Detail - Stopping Bead Section

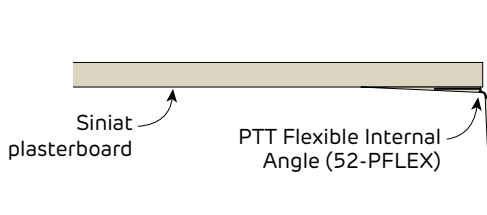


FIGURE 90 Finishing Detail - Flexible Square Set Section

i Gaps around the ceiling perimeter may reduce acoustic performance

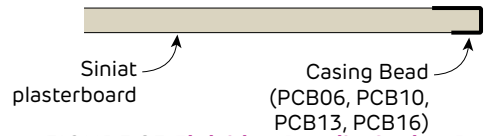


FIGURE 87 Finishing Detail - Casing Bead Section

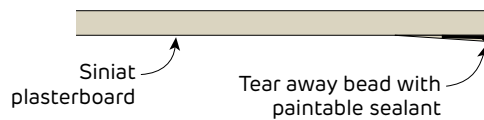


FIGURE 89 Finishing Detail - Square Set Section

i Ceilings using a square set finishing detail have low tolerance for building movement and are more prone to cracking and joint peaking

i Some damage to ceiling linings for finishing details with low tolerance to movement can be expected in a Serviceability Earthquake event

Fire Rated and Non-Fire Rated Ceiling Perimeter Finishing Details

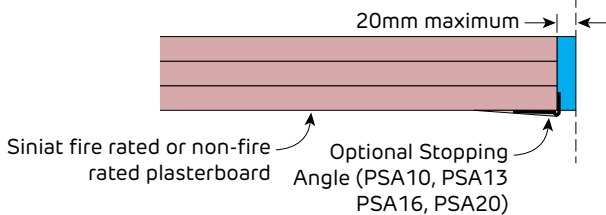


FIGURE 91 Finishing Detail - Stopping Angle
Valid for 1 to 4 layers
Section

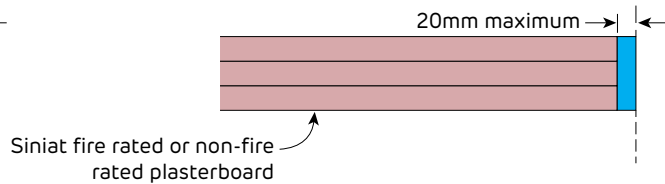


FIGURE 92 Finishing Detail - Bare finish with Sealant
Valid for 1 to 4 layers
Section

i Not suitable for single layer ceiling

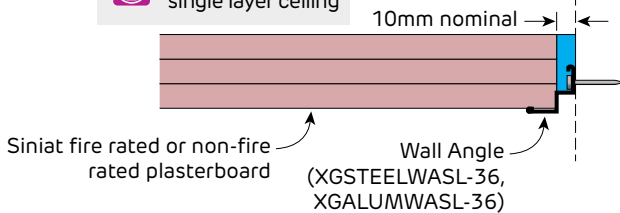


FIGURE 93 Finishing Detail - Shadowline Wall Angle
Valid for 2 to 4 layers only
Section

i Not suitable for single layer ceiling

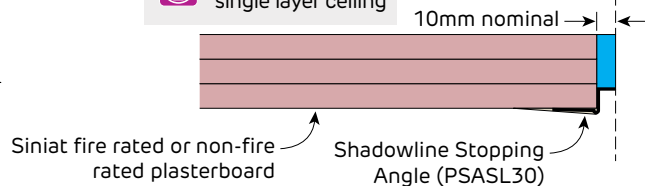


FIGURE 94 Finishing Detail - Shadowline
Valid for 2 to 4 layers only
Section

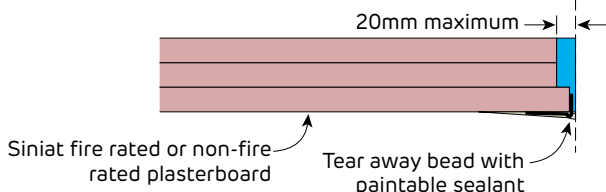


FIGURE 95 Finishing Detail - Square Set
Valid for 1 to 4 layers
Section

i Ceilings using a square set finishing detail have low tolerance for building movement and are more prone to cracking and joint peaking

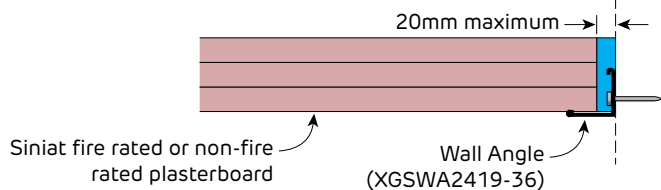


FIGURE 96 Finishing Detail - Wall Angle
Valid for 1 to 4 layers
Section

i Some damage to ceiling linings for finishing details with low tolerance to movement can be expected in a Serviceability Earthquake event