5.1 Ceilings

This section contains a wide range of internal ceiling solutions that can meet aesthetic, sound insulation and fire protection requirements. They are either directly fixed to joists or are installed to a concealed suspended steel frame.

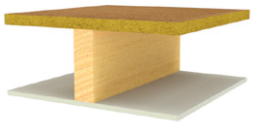
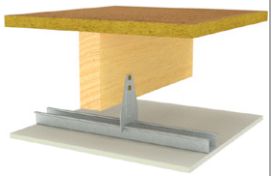
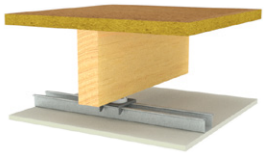
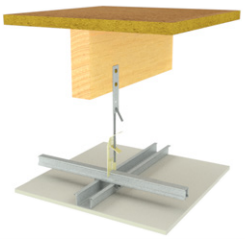
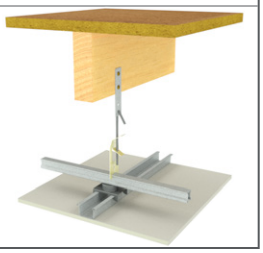
Most fire rated ceilings as per National Construction Code (NCC) requirements are rated from below only. For ceilings fire rated from above, or fire rated from above and below refer to Sections 5.3 and 5.4.

This section includes ceiling systems, installation instructions and construction details for general and fire rated ceilings.

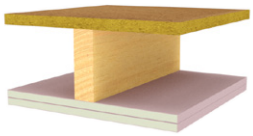
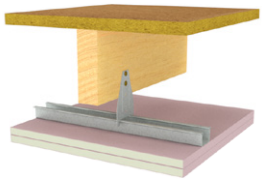
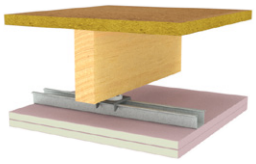
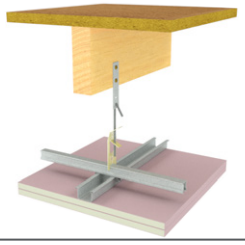
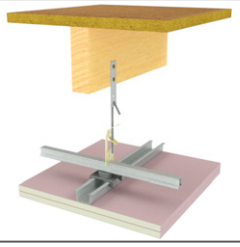
Exterior ceiling applications have additional requirements [Refer to External Ceilings in this section].

System Directory

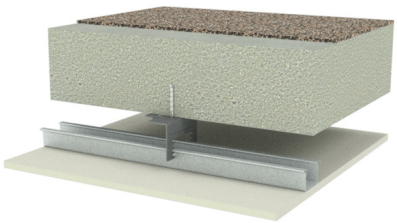
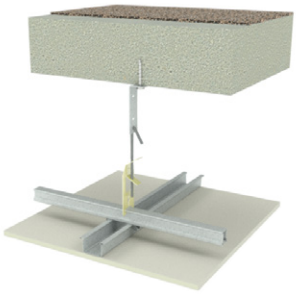
Ceiling Under Floor Framing

Plasterboard fixed to joist	A-clips and Furring Channel	Resilient Mount and Furring Channel	Top Cross Rail and Furring Channel	Top Cross Rail, Resilient Mount and Furring Channel
				

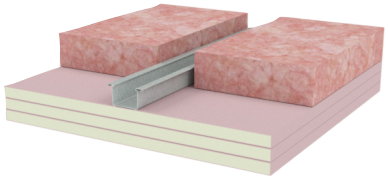
Fire Rated Ceilings Under Floor Framing

Plasterboard fixed to joist	A-clips and Furring Channel	Resilient Mount and Furring Channel	Top Cross Rail and Furring Channel	Top Cross Rail, Resilient Mount and Furring Channel
				

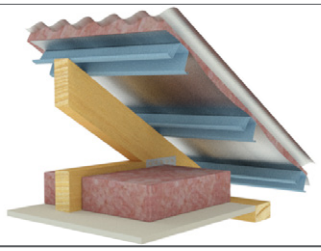
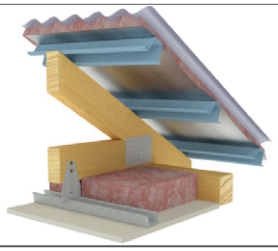
Non-Fire Rated and Fire Rated Ceiling Under a Concrete Slab

Clips and Furring Channel	Resilient Mount and Furring Channel	Top Cross Rail and Furring Channel
		

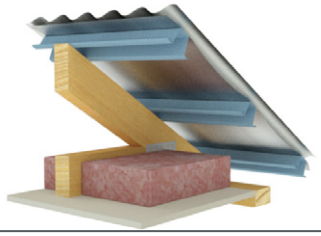
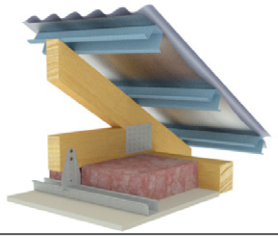
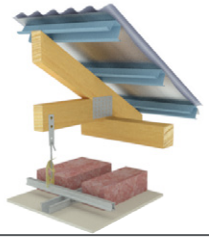
Universal Fire Rated Ceilings

Joist or Furring Channel


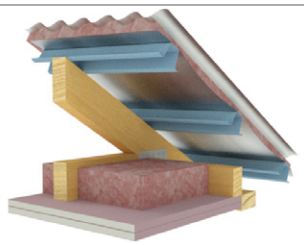
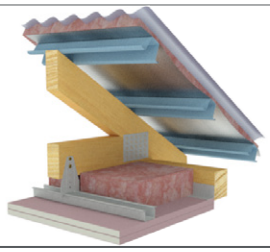
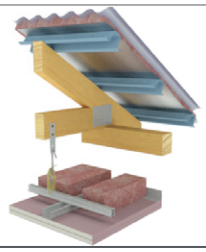
Ceiling Under Steel Roof Sheeting with Foil Backed Insulation

Plasterboard fixed to joist	A-clips and Furring Channel	Top Cross Rail and Furring Channel
		

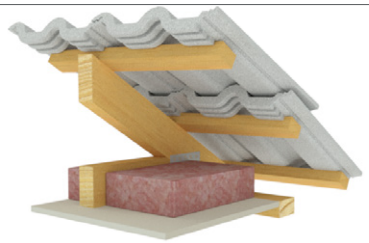
Ceiling Under Steel Roof Sheeting with Reflective Foil Only

Plasterboard fixed to joist	A-clips and Furring Channel	Top Cross Rail and Furring Channel
		

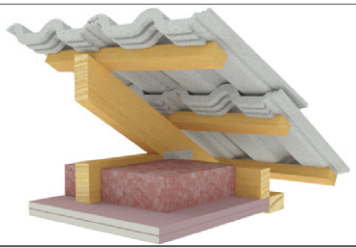
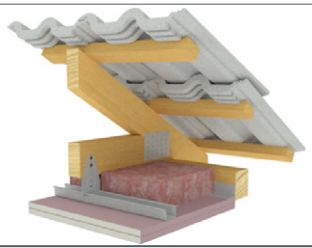
Fire Rated Ceiling Under Steel Roof Sheeting with Foil Backed Insulation

Plasterboard fixed to joist	A-clips and Furring Channel	Top Cross Rail and Furring Channel
		

Ceiling Under Tiled Roof

Plasterboard fixed to joist	A-clips and Furring Channel
	

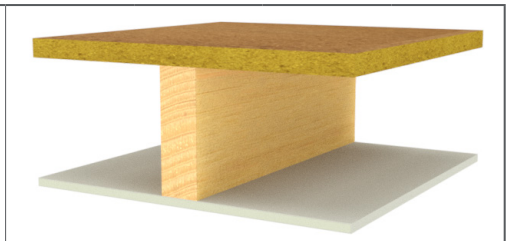
Fire Rated Ceiling Under Tiled Roof

Plasterboard fixed to joist	A-clips and Furring Channel
	

CUJ10-CUJ19

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]

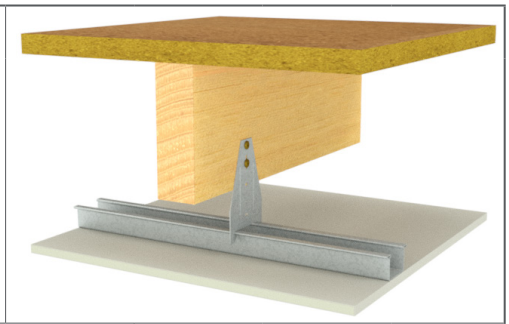


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
		No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	Report
CUJ10	1 layer of 10mm **masta**shield or **span**shield	44 (37)	46 (40)	39	78	Day Design 3094-26
CUJ11	2 layers of 10mm **masta**shield or **span**shield	47 (41)	48 (43)	38	76	
CUJ14	1 layer of 13mm **masta**shield	44 (38)	46 (41)	38	77	
CUJ16	1 layer of 10mm **sound**shield or **opal**	44 (38) [1]	46 (41) [2]	38 [3]	77 [4]	[1]TL458Ta [2]TL458Tb [3]TL458id [4]TL458ic
CUJ17	2 layers of 10mm **sound**shield or **opal**	48 (42)	49 (44)	37	75	
CUJ18	1 layer of 13mm **sound**shield	45 (40)	46 (41)	38	76	
CUJ19	2 layers of 13mm **sound**shield	49 (44)	49 (45)	37	73	

CUJ20-CUJ29

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- A-clips and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]

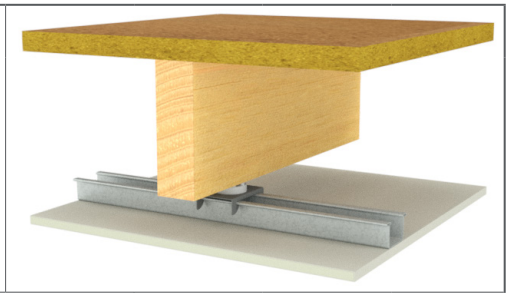


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
		No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	Report
CUJ20	1 layer of 10mm **masta**shield or **span**shield	47 (41)	53 (46)	39	71	Day Design 3094-26
CUJ21	2 layers of 10mm **masta**shield or **span**shield	50 (44)	55 (49)	38	68	
CUJ24	1 layer of 13mm **masta**shield	48 (42)	53 (46)	38	69	
CUJ26	1 layer of 10mm **sound**shield or **opal**	48 (42)	53 (46)	38 [1]	69	[1]TL458Tie
CUJ27	2 layers of 10mm **sound**shield or **opal**	51 (46)	56 (49)	37	67	
CUJ28	1 layer of 13mm **sound**shield	49 (43)	53 (47)	38	68	
CUJ29	2 layers of 13mm **sound**shield	52 (47)	56 (50)	37	65	

CUJ30-CUJ39

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Resilient Mounts and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]



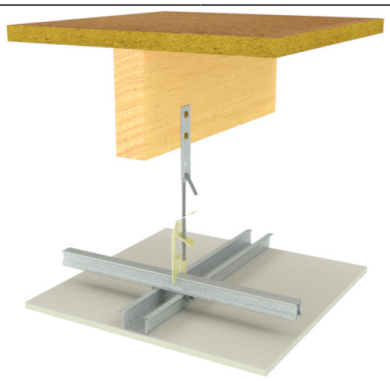
System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
		No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	Report
CUJ30	1 layer of 10mm **masta**shield or **span**shield	45 (40)	50 (42)	28	68	Day Design 3094-26
CUJ31	2 layers of 10mm **masta**shield or **span**shield	49 (44)	54 (48)	27	66	
CUJ34	1 layer of 13mm **masta**shield	46 (41)	51 (44)	27	67	
CUJ36	1 layer of 10mm **sound**shield or **opal**	46 (41)	51 (44)	27	67	[1]TL458Tf [2]TL458Tih
CUJ37	2 layers of 10mm **sound**shield or **opal**	51 (45) [1]	56 (50)	26	64 [2]	
CUJ38	1 layer of 13mm **sound**shield	48 (43)	53 (47)	27	66	
CUJ39	2 layers of 13mm **sound**shield	53 (48)	57 (52)	26	63	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUJ40-CUJ49

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Suspended Top Cross Rail and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]

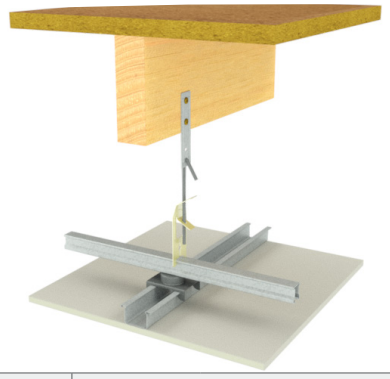


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
		No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
CUJ40	1 layer of 10mm **masta**shield or **span**shield	45 (37)	52 (45)	28	67	Report Day Design 3094-26 [1]TL458Tik
CUJ41	2 layers of 10mm **masta**shield or **span**shield	50 (41)	55 (51)	27	65	
CUJ44	1 layer of 13mm **masta**shield	47 (38)	52 (47)	27	66	
CUJ46	1 layer of 10mm **sound**shield or **opal**	47 (38)	52 (47)	27	66	
CUJ47	2 layers of 10mm **sound**shield or **opal**	51 (43)	56 (51)	26	63 [1]	
CUJ48	1 layer of 13mm **sound**shield	48 (40)	53 (49)	27	65	
CUJ49	2 layers of 13mm **sound**shield	53 (45)	57 (53)	26	62	

CUJ50-CUJ59

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Suspended Top Cross Rail with Resilient Mount and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]



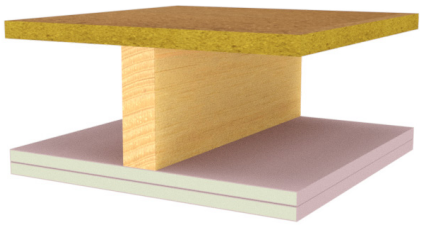
System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
		No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
CUJ50	1 layer of 10mm **masta**shield or **span**shield	46 (38)	54 (48)	28	67	Report Day Design 3094-26 [1]TL458Til
CUJ51	2 layers of 10mm **masta**shield or **span**shield	50 (42)	58 (53)	27	65	
CUJ54	1 layer of 13mm **masta**shield	47 (40)	55 (49)	27	66	
CUJ56	1 layer of 10mm **sound**shield or **opal**	47 (40)	55 (49)	27	66 [1]	
CUJ57	2 layers of 10mm **sound**shield or **opal**	52 (44)	59 (54)	26	63	
CUJ58	1 layer of 13mm **sound**shield	50 (42)	56 (52)	27	65	
CUJ59	2 layers of 13mm **sound**shield	55 (47)	60 (57)	26	62	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUJ210-CUJ218

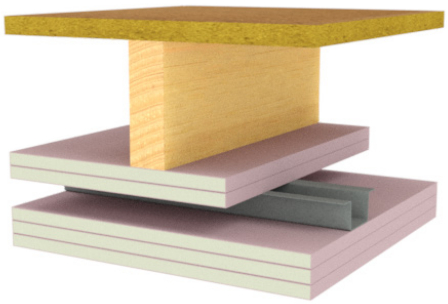
- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Plasterboard Ceiling Lining ad specified in table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]
fireshield can be substituted with **multi**shield or **tru**rock



FRL Rated from below	**RISF**	**System**	**Ceiling Lining**	**Max Framing Centres (mm)**	**Airborne Sound Insulation Rw (Rw + Ctr)**		**Impact Sound Insulation Ln,w**		
Report FC14332					No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
30/30/30	-	CUJ210	1 layer of 13mm **fire**shield	600	45 (39)	46 (41)	**38**	77	Report Day Design 3094-26 3094-50
60/60/60	-	CUJ211	2 layers of 13mm **fire**shield	450	48 (43)	49 (45)	**37**	75	
60/60/60	-	CUJ212	1 layer of 16mm **fire**shield	450	45 (40)	46 (41)	**38**	76	
60/60/60	60	CUJ213	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	49 (43)	49 (45)	**37**	75	
60/60/60	60	CUJ214	2 layers of 16mm **fire**shield	600	50 (44)	51 (46)	**37**	73	
90/90/90	60	CUJ215	2 layers of 16mm **fire**shield	450	50 (44)	51 (46)	**37**	73	
90/90/90	60	CUJ216	3 layers of 13mm **fire**shield	450	51 (46)	51 (47)	**36**	72	
120/120/120	60	CUJ217	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	52 (46)	52 (48)	**36**	72	
120/120/120	60	CUJ218	3 layers of 16mm **fire**shield	450	52 (47)	52 (48)	**35**	72	

CUJ500



- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Timber or steel ceiling joists
- 2 layers of 16mm **fire**shield
- Perpendicular top-hats or furring channels at maximum 450mm centres
- [Below] 3 layers of 16mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

180/180/180
from below only

RISF 180 minutes

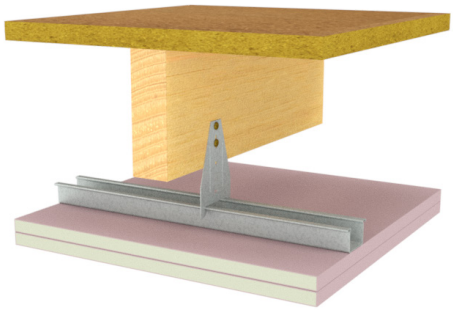
Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	
53 (45)	54 (**50**)	Report INSUL v9

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUJ220-CUJ228

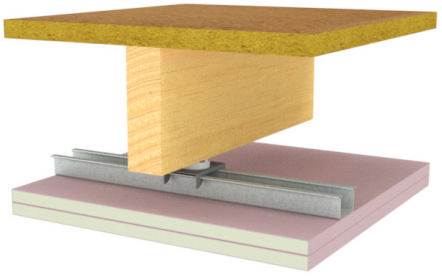


- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- A-clips and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]
fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
Report FC14332					No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
30/30/30	-	CUJ220	1 layer of 13mm **fire**shield	600	47 (42)	51 (45)	**38**	69	Report Day Design 3094-26 3094-50
60/60/60	-	CUJ221	2 layers of 13mm **fire**shield	450	52 (46)	57 (**50**)	**37**	66	
60/60/60	-	CUJ222	1 layer of 16mm **fire**shield	450	49 (43)	54 (48)	**38**	68	
60/60/60	60	CUJ223	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	53 (47)	56 (**51**)	**37**	66	
60/60/60	60	CUJ224	2 layers of 16mm **fire**shield	600	53 (48)	56 (**51**)	**37**	66	
90/90/90	60	CUJ225	2 layers of 16mm **fire**shield	450	53 (48)	56 (**51**)	**37**	66	
90/90/90	60	CUJ226	3 layers of 13mm **fire**shield	450	55 (**50**)	58 (**53**)	**36**	65	
120/120/120	60	CUJ227	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	56 (**50**)	59 (**54**)	**36**	64	
120/120/120	60	CUJ228	3 layers of 16mm **fire**shield	450	56 (**51**)	59 (**54**)	**36**	64	

CUJ230-CUJ238



- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Resilient Mounts and Furring Channel
- Plasterboard ceiling lining as specified in the table

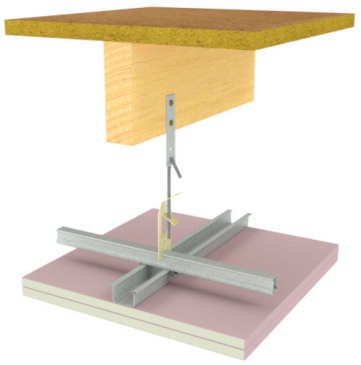
[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]
fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
Report FC14332					No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
30/30/30	-	CUJ230	1 layer of 13mm **fire**shield	600	47 (42)	51 (45)	**27**	65	Report Day Design 3094-26 3094-50 [1]TL458Tj [2]TL458Tij
60/60/60	-	CUJ231	2 layers of 13mm **fire**shield	450	51 (46)	56 (**50**)	**26**	63	
60/60/60	-	CUJ232	1 layer of 16mm **fire**shield	450	48 (43)	53 (47)	**27**	65	
60/60/60	60	CUJ233	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	53 (48)	56 (**51**)	**26**	**62** [2]	
60/60/60	60	CUJ234	2 layers of 16mm **fire**shield	600	54 (48)	56 (**51**)	**26**	**62**	
90/90/90	60	CUJ235	2 layers of 16mm **fire**shield	450	54 (48)	56 (**51**)	**26**	**62**	
90/90/90	60	CUJ236	3 layers of 13mm **fire**shield	450	55 (**50**)	59 (**53**)	**26**	**61**	
120/120/120	60	CUJ237	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	56 (**51**)	59 (**54**)	**26**	**60**	
120/120/120	60	CUJ238	3 layers of 16mm **fire**shield	450	57 (**51**)	59 (**54**)	**26**	**60**	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUJ240-CUJ248

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Suspended Top Cross Rail and Furring Channel
- Plasterboard ceiling lining as specified in the table

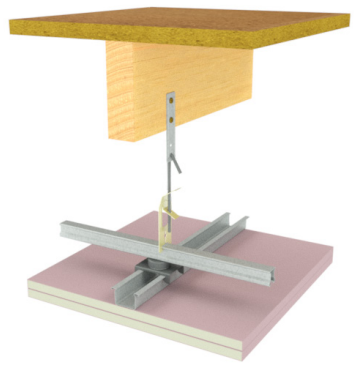


[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]
fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
Report FC14332					No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
30/30/30	-	CUJ240	1 layer of 13mm **fire**shield	600	48 (40)	53 (48)	**27**	65	Report Day Design 3094-26 3094-50
60/60/60	-	CUJ241	2 layers of 13mm **fire**shield	450	52 (44)	57 (**52**)	**26**	63	
60/60/60	-	CUJ242	1 layer of 16mm **fire**shield	450	48 (40)	53 (49)	**27**	65	
60/60/60	60	CUJ243	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	53 (45)	57 (**53**)	**26**	**62**	
60/60/60	60	CUJ244	2 layers of 16mm **fire**shield	600	54 (46)	58 (**54**)	**26**	**62**	
90/90/90	60	CUJ245	2 layers of 16mm **fire**shield	450	54 (46)	58 (**54**)	**26**	**62**	
90/90/90	60	CUJ246	3 layers of 13mm **fire**shield	450	55 (47)	59 (**55**)	**26**	**61**	
120/120/120	60	CUJ247	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	56 (48)	59 (**56**)	**26**	**60**	
120/120/120	60	CUJ248	3 layers of 16mm **fire**shield	450	56 (48)	60 (**56**)	**26**	**60**	

CUJ250-CUJ258

- Minimum 19mm particleboard flooring or timber flooring with either carpet, tiles or left bare
- Minimum 140mm cavity with timber or steel ceiling joists
- Suspended Top Cross Rail with Resilient Mount and Furring Channel
- Plasterboard ceiling lining as specified in the table



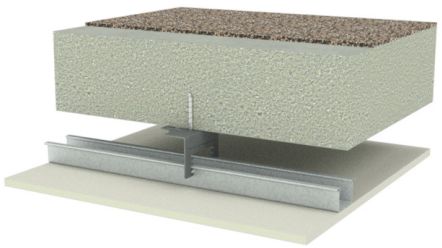
[Carpet requires an underlay and tiles require a fibre cement underlay]
[Impact Sound Insulation values determined using insulation]
fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		Impact Sound Insulation Ln,w		
Report FC14332					No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Carpet and Underlay	Tiled or Left bare	
30/30/30	-	CUJ250	1 layer of 13mm **fire**shield	600	49 (41)	55 (**51**)	**27**	64	Report Day Design 3094-26
60/60/60	-	CUJ251	2 layers of 13mm **fire**shield	450	53 (45)	60 (**55**)	**26**	63	
60/60/60	-	CUJ252	1 layer of 16mm **fire**shield	450	50 (42)	56 (**52**)	**27**	64	
60/60/60	60	CUJ253	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	54 (46)	60 (**56**)	**26**	**62**	
60/60/60	60	CUJ254	2 layers of 16mm **fire**shield	600	55 (47)	61 (**57**)	**26**	**62**	
90/90/90	60	CUJ255	2 layers of 16mm **fire**shield	450	55 (47)	61 (**57**)	**26**	**62**	
90/90/90	60	CUJ256	3 layers of 13mm **fire**shield	450	57 (49)	62 (**59**)	**26**	**61**	
120/120/120	60	CUJ257	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	58 (**50**)	63 (**59**)	**26**	**60**	
120/120/120	60	CUJ258	3 layers of 16mm **fire**shield	450	58 (**50**)	63 (**60**)	**26**	**60**	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUC20-CUC228

- 4.5mm thick Regupol 4515 or 4mm thick A1 Rubber 720 AcoustaMat, if specified in table
- Concrete slab as specified in table, with either carpet, tiles, timber flooring or left bare
- Minimum 50mm cavity with Clips and Furring Channel
- Plasterboard ceiling lining as specified in the table



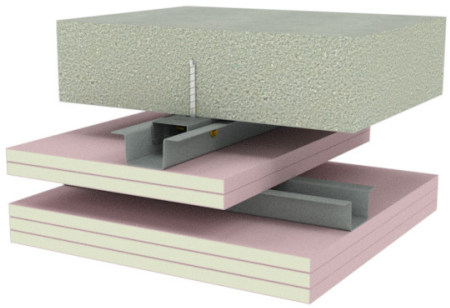
mastashield can be substituted with **water**shield
fireshield can be substituted with **multi**shield or **tru**rock
FRL is applicable to any concrete slab thickness

FRL Rated from below	RISF	System	Ceiling Lining	Maximum Framing Centres (mm)	Insulation	Airborne Sound Insulation Rw (Rw + Ctr)	Impact Sound Insulation Ln,w		
							Day Design 5008-25, 5008-43		
Report FC14332					Pink® Partition 50mm 11kg/m³ R1.2		Tiled, timber flooring or left bare	Tiled or timber flooring with acoustic underlay	Carpet and Underlay
150mm thick concrete slab									
-	-	CUC20	1 layer of 10mm **masta**shield	450	No	55 (45)	70	**59**	**43**
					Yes	59 (49)	67	**54**	**38**
-	-	CUC22	1 layer of 10mm **span**shield	600	No	55 (45)	70	**59**	**43**
					Yes	59 (49)	67	**54**	**38**
-	-	CUC24	1 layer of 13mm **masta**shield	600	No	56 (46)	70	**59**	**43**
					Yes	60 (**50**)	67	**54**	**38**
-	-	CUC26	1 layer of 10mm **sound**shield or **opal**	600	No	56 (46)	70	**59**	**43**
					Yes	60 (**50**)	64 [1]	**54**	**38**
30/30/30	-	CUC220	1 layer of 13mm **fire**shield	600	No	57 (47)	70	**58**	**42**
					Yes	62 (**52**)	67	**53**	**37**
60/60/60	-	CUC222	1 layer of 16mm **fire**shield	450	No	58 (48)	70	**58**	**42**
					Yes	63 (**53**)	67	**53**	**37**
60/60/60	60	CUC223	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	60 (**52**)	68	**57**	**41**
					Yes	65 (**54**)	65	**52**	**36**
90/90/90	60	CUC225	2 layers of 16mm **fire**shield	450	No	61 (**53**)	68	**57**	**41**
					Yes	65 (**55**)	65	**52**	**36**
120/120/120	60	CUC228	3 layers of 16mm **fire**shield	450	No	62 (**55**)	68	**56**	**40**
					Yes	67 (**56**)	65	**51**	**35**
200mm thick concrete slab									
-	-	CUC120	1 layer of 10mm **masta**shield	450	No	58 (48)	68	**58**	**42**
					Yes	62 (**51**)	65	**53**	**37**
-	-	CUC122	1 layer of 10mm **span**shield	600	No	58 (48)	68	**58**	**42**
					Yes	62 (**51**)	65	**53**	**37**
-	-	CUC124	1 layer of 13mm **masta**shield	600	No	59 (**50**)	68	**58**	**42**
					Yes	63 (**52**)	64	**53**	**37**
-	-	CUC126	1 layer of 10mm **sound**shield or **opal**	600	No	59 (49)	68	**58**	**42**
					Yes	63 (**52**)	64	**53**	**37**
30/30/30	-	CUC320	1 layer of 13mm **fire**shield	600	No	61 (**50**)	67	**57**	**41**
					Yes	65 (**53**)	64	**52**	**36**
60/60/60	-	CUC322	1 layer of 16mm **fire**shield	450	No	63 (**51**)	67	**57**	**41**
					Yes	66 (**54**)	64	**52**	**36**
60/60/60	60	CUC323	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	64 (**54**)	65	**56**	**40**
					Yes	67 (**58**)	63	**51**	**35**
90/90/90	60	CUC325	2 layers of 16mm **fire**shield	450	No	64 (**55**)	65	**56**	**40**
					Yes	67 (**58**)	63	**51**	**35**
120/120/120	60	CUC328	3 layers of 16mm **fire**shield	450	No	65 (**56**)	64	**55**	**39**
					Yes	68 (**59**)	63	**50**	**34**

[1] TL458io

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUC500



- Minimum 150mm thick concrete slab
- 2 layers of 16mm **fire**shield
- Perpendicular top-hats or furring channels at maximum 450mm centres
- [Below] 3 layers of 16mm **fire**shield

Fire Resistance Level

180/180/180
from below only

RISF 180 minutes

Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report INSUL v9
64 (**58**)	65 (**61**)	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUC30-CUC238

- 4.5mm thick Regupol 4515 or 4mm thick A1 Rubber 720 AcoustaMat, if specified in table
- Concrete slab as specified in table, with either carpet, tiles, timber flooring or left bare
- Minimum 50mm cavity with Resilient Mounts and Furring Channel or separate stud ceiling frame
- Plasterboard ceiling lining as specified in the table

mastashield can be substituted with **water**shield
fireshield can be substituted with **multi**shield or **tru**rock
FRL is applicable to any concrete slab thickness

FRL Rated from below	**RISF**	**System**	**Ceiling Lining**	**Maximum Framing Centres (mm)**	**Insulation**	**Airborne Sound Insulation Rw (Rw + Ctr)**	**Impact Sound Insulation Ln,w**		
							Day Design 5008-25, 5008-43		
Report FC14332					Pink® Partition 50mm 11kg/m³ R1.2		Tiled, timber flooring or left bare	Tiled or timber flooring with acoustic underlay	Carpet and Underlay
150mm thick concrete slab									
-	-	CUC30	1 layer of 10mm **masta**shield	450	No	56 (46)	65	**54**	**38**
					Yes	61 (**51**)	**62**	**49**	**33**
-	-	CUC32	1 layer of 10mm **span**shield	600	No	56 (46)	65	**54**	**38**
					Yes	61 (**51**)	**62**	**49**	**33**
-	-	CUC34	1 layer of 13mm **masta**shield	600	No	57 (47)	65	**54**	**38**
					Yes	62 (**52**)	**62**	**49**	**33**
-	-	CUC36	1 layer of 10mm **sound**shield or **opal**	600	No	57 (47)	65	**54**	**38**
					Yes	62 (**52**)	**61** [1]	**49**	**33**
30/30/30	-	CUC230	1 layer of 13mm **fire**shield	600	No	58 (48)	65	**53**	**37**
					Yes	64 (**54**)	**62**	**48**	**32**
60/60/60	-	CUC232	1 layer of 16mm **fire**shield	450	No	59 (49)	65	**53**	**37**
					Yes	65 (**55**)	**62**	**48**	**32**
60/60/60	60	CUC233	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	61 (**52**)	63	**52**	**36**
					Yes	66 (**56**)	**60**	**47**	**31**
90/90/90	60	CUC235	2 layers of 16mm **fire**shield	450	No	62 (**53**)	63	**52**	**36**
					Yes	66 (**57**)	**60**	**47**	**31**
120/120/120	60	CUC238	3 layers of 16mm **fire**shield	450	No	65 (**55**)	63	**51**	**35**
					Yes	68 (**58**)	**60**	**46**	**30**
200mm thick concrete slab									
-	-	CUC130	1 layer of 10mm **masta**shield	450	No	62 (**51**)	63	**53**	**37**
					Yes	65 (**54**)	**60**	**48**	**32**
-	-	CUC132	1 layer of 10mm **span**shield	600	No	62 (**51**)	63	**53**	**37**
					Yes	65 (**54**)	**60**	**48**	**32**
-	-	CUC134	1 layer of 13mm **masta**shield	600	No	63 (**52**)	63	**53**	**37**
					Yes	66 (**55**)	**59**	**48**	**32**
-	-	CUC136	1 layer of 10mm **sound**shield or **opal**	600	No	63 (**52**)	63	**53**	**37**
					Yes	66 (**55**)	**59**	**48**	**32**
30/30/30	-	CUC330	1 layer of 13mm **fire**shield	600	No	65 (**54**)	**62**	**52**	**36**
					Yes	68 (**57**)	**59**	**47**	**31**
60/60/60	-	CUC332	1 layer of 16mm **fire**shield	450	No	66 (**55**)	**62**	**52**	**36**
					Yes	69 (**58**)	**59**	**47**	**31**
60/60/60	60	CUC333	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	67 (**56**)	**60**	**51**	**35**
					Yes	70 (**59**)	**58**	**46**	**30**
90/90/90	60	CUC335	2 layers of 16mm **fire**shield	450	No	67 (**57**)	**60**	**51**	**35**
					Yes	70 (**60**)	**58**	**46**	**30**
120/120/120	60	CUC338	3 layers of 16mm **fire**shield	450	No	68 (**58**)	**59**	**50**	**34**
					Yes	71 (**61**)	**58**	**45**	**29**

[1] TL458io

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUC40-CUC248

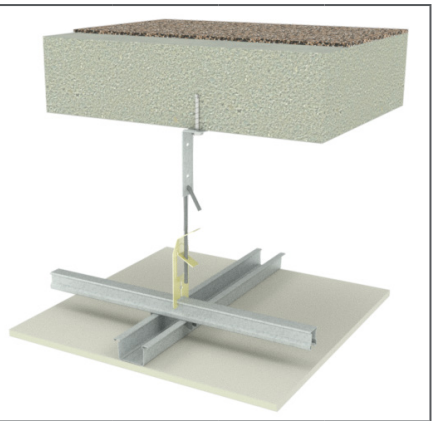
- 4.5mm thick Regupol 4515 or 4mm thick A1 Rubber 720 AcoustaMat, if specified in table
- Concrete slab as specified in table, with either carpet, tiles, timber flooring or left bare
- Minimum 300mm cavity with Suspended Top Cross Rail and Furring Channel, or steel stud ceiling without dropper studs with minimum 10mm gap between studs and concrete.
- Plasterboard ceiling lining as specified in the table

For a cavity size of 150mm to 300mm:

> Rw and Rw+Ctr ratings will reduce by 2 points

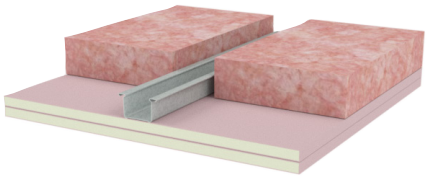
> Ln,w will remain unchanged

mastashield can be substituted with **water**shield
fireshield can be substituted with **multi**shield or **tru**rock
FRL is applicable to any concrete slab thickness



FRL Rated from below	RISF	System	Ceiling Lining	Maximum Framing Centres (mm)	Insulation	Airborne Sound Insulation Rw (Rw + Ctr)	Impact Sound Insulation Ln,w		
							Day Design 5008-25, 5008-43		
Report FC14332					Pink® Partition 50mm 11kg/m³ R1.2		Tiled, timber flooring or left bare	Tiled or timber flooring with acoustic underlay	Carpet and Underlay
150mm thick concrete slab									
-	-	CUC40	1 layer of 10mm **masta**shield	450	No	61 (**50**)	64	**53**	**37**
					Yes	64 (**53**)	**61**	**48**	**32**
-	-	CUC42	1 layer of 10mm **span**shield	600	No	61 (**50**)	64	**53**	**37**
					Yes	64 (**53**)	**61**	**48**	**32**
-	-	CUC44	1 layer of 13mm **masta**shield	600	No	62 (**51**)	64	**53**	**37**
					Yes	65 (**54**)	**61**	**48**	**32**
-	-	CUC46	1 layer of 10mm **sound**shield or **opal**	600	No	62 (**51**)	64	**53**	**37**
					Yes	65 (**54**)	**61**	**48**	**32**
30/30/30	-	CUC240	1 layer of 13mm **fire**shield	600	No	64 (**53**)	64	**52**	**36**
					Yes	67 (**56**)	**61**	**47**	**31**
60/60/60	-	CUC242	1 layer of 16mm **fire**shield	450	No	65 (**54**)	64	**52**	**36**
					Yes	68 (**57**)	**61**	**47**	**31**
60/60/60	60	CUC243	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	66 (**55**)	**62**	**51**	**35**
					Yes	69 (**58**)	**59**	**46**	**30**
90/90/90	60	CUC245	2 layers of 16mm **fire**shield	450	No	66 (**56**)	**62**	**51**	**35**
					Yes	69 (**59**)	**59**	**46**	**30**
120/120/120	60	CUC248	3 layers of 16mm **fire**shield	450	No	67 (**57**)	**62**	**50**	**34**
					Yes	70 (**60**)	**59**	**45**	**29**
200mm thick concrete slab									
-	-	CUC140	1 layer of 10mm **masta**shield	450	No	64 (**53**)	**62**	**52**	**36**
					Yes	67 (**56**)	**59**	**47**	**31**
-	-	CUC142	1 layer of 10mm **span**shield	600	No	64 (**53**)	**62**	**52**	**36**
					Yes	67 (**56**)	**59**	**47**	**31**
-	-	CUC144	1 layer of 13mm **masta**shield	600	No	65 (**54**)	**62**	**52**	**36**
					Yes	68 (**57**)	**58**	**47**	**31**
-	-	CUC146	1 layer of 10mm **sound**shield or **opal**	600	No	65 (**54**)	**62**	**52**	**36**
					Yes	68 (**57**)	**58**	**47**	**31**
30/30/30	-	CUC340	1 layer of 13mm **fire**shield	600	No	67 (**56**)	**61**	**51**	**35**
					Yes	70 (**59**)	**58**	**46**	**30**
60/60/60	-	CUC342	1 layer of 16mm **fire**shield	450	No	68 (**57**)	**61**	**51**	**35**
					Yes	71 (**60**)	**58**	**46**	**30**
60/60/60	60	CUC343	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	No	69 (**58**)	**59**	**50**	**34**
					Yes	72 (**61**)	**57**	**45**	**29**
90/90/90	60	CUC345	2 layers of 16mm **fire**shield	450	No	69 (**59**)	**59**	**50**	**34**
					Yes	72 (**62**)	**57**	**45**	**29**
120/120/120	60	CUC348	3 layers of 16mm **fire**shield	450	No	70 (**60**)	**58**	**49**	**33**
					Yes	73 (**63**)	**57**	**44**	**28**

UCS400



- Minimum 140mm cavity with timber joists, steel ceiling joists or any furring channel ceiling at maximum 450mm centres
- [Below] 2 layers of 13mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

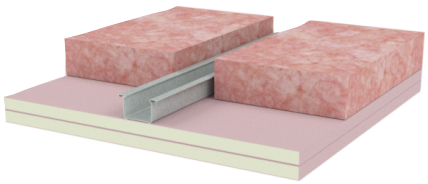
30/30/30
from below only

Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report
34 (30)[1]	39 (35)	Day Design 3094-33 [1]ATF1530 INSUL v9

UCS401



- Minimum 140mm cavity with timber joists, steel ceiling joists or any furring channel ceiling at maximum **600mm** centres
- [Below] 2 layers of 16mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

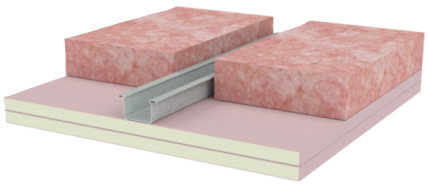
30/30/30
from below only

Report FC14332

Sound Insulation for framing at 600mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report
35 (32)	40 (37)	Day Design 3094-23 Insul v9

UCS402



- Minimum 140mm cavity with timber joists, steel ceiling joists or any furring channel ceiling at maximum **450mm** centres
- [Below] 2 layers of 16mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

60/60/60
from below only

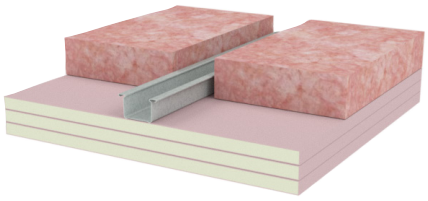
RISF 60 minutes

Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report
35 (32)	40 (37)	Day Design 3094-23 Insul v9

UCS403



- Minimum 140mm cavity with timber joists, steel ceiling joists or any furring channel ceiling at maximum 450mm centres
- [Below] 3 layers of 16mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

90/90/90
from below only

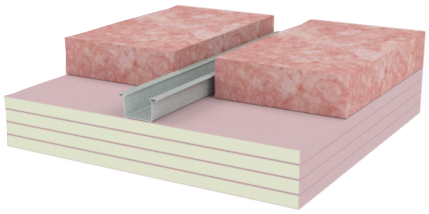
RISF 90 minutes

Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report
38 (36)	44 (40)	Day Design 3094-23 Insul v9

UCS404



- Minimum 140mm cavity with timber joists, steel ceiling joists or any furring channel ceiling at maximum 450mm centres
- [Below] 4 layers of 16mm **fire**shield

fireshield can be substituted with **multi**shield

Fire Resistance Level

120/120/120
from below only

RISF 120 minutes

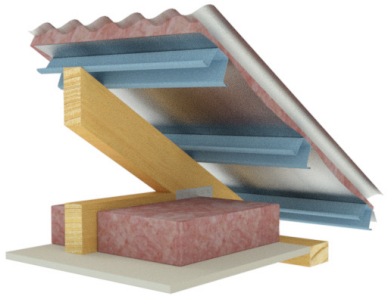
Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

No insulation	Pink® Partition 50mm 11 kg/m³ R1.2	Report Insul v9
41 (39)	46 (43)	

CUR10-CUR19

- Sheet metal roofing
- Permastop® Building Blanket R1.3 with Sisalation® reflective facing foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

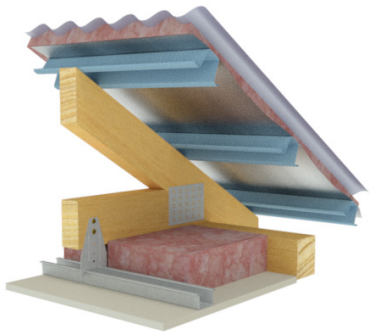


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR10	1 layer of 10mm **masta**shield or **span**shield	41 (37)	41 (35)	Report Day Design 5008-24 [1]TL458Rf
CUR11	2 layers of 10mm **masta**shield or **span**shield	43 (40)	43 (39)	
CUR14	1 layer of 13mm **masta**shield	43 (39)	43 (37)	
CUR16	1 layer of 10mm **sound**shield or **opal**	44 (40)	44 (38)	
CUR17	2 layers of 10mm **sound**shield or **opal**	45 (42)[1]	45 (41)	
CUR18	1 layer of 13mm **sound**shield	44 (41)	44 (39)	
CUR19	2 layers of 13mm **sound**shield	47 (45)	48 (44)	

CUR20-CUR29

- Sheet metal roofing
- Permastop® Building Blanket R1.3 with Sisalation® reflective facing foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- A-clips and Furring Channel
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]

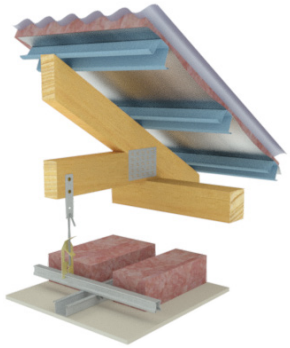


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR20	1 layer of 10mm **masta**shield or **span**shield	51 (42)	50 (40)	Report Day Design 5008-24 [1]TL458Rm
CUR21	2 layers of 10mm **masta**shield or **span**shield	53 (45)	52 (43)	
CUR24	1 layer of 13mm **masta**shield	53 (44)	52 (42)	
CUR26	1 layer of 10mm **sound**shield or **opal**	54 (45)	53 (43)	
CUR27	2 layers of 10mm **sound**shield or **opal**	55 (48)[1]	55 (46)	
CUR28	1 layer of 13mm **sound**shield	55 (46)	54 (44)	
CUR29	2 layers of 13mm **sound**shield	58 (51)	58 (49)	

CUR40-CUR49

- Sheet metal roofing
- Permastop® Building Blanket R1.3 with Sisalation® reflective facing foil
- Timber or steel, rafters, purlins or trusses
- Suspended Top Cross Rail and Furring Channel
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]

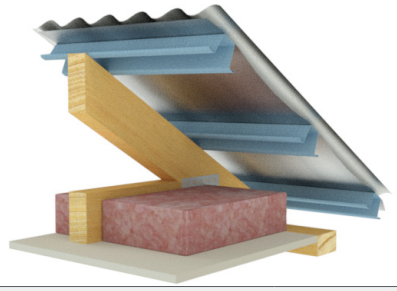


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR40	1 layer of 10mm **masta**shield or **span**shield	51 (42)	50 (40)	Report Day Design 5008-24 [1]TL458Ri
CUR41	2 layers of 10mm **masta**shield or **span**shield	53 (45)	52 (44)	
CUR44	1 layer of 13mm **masta**shield	53 (44)	52 (42)	
CUR46	1 layer of 10mm **sound**shield or **opal**	54 (45)	53 (43)	
CUR47	2 layers of 10mm **sound**shield or **opal**	55 (48)[1]	55 (46)	
CUR48	1 layer of 13mm **sound**shield	55 (46)	54 (44)	
CUR49	2 layers of 13mm **sound**shield	58 (51)	58 (49)	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR60-CUR69

- Sheet metal roofing
- Sisalation® Metal Roof Sarking
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

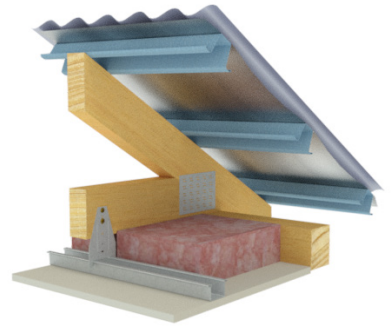


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR60	1 layer of 10mm **masta**shield or **span**shield	39 (36)	39 (34)	Report Day Design 5008-27
CUR61	2 layers of 10mm **masta**shield or **span**shield	41 (39)	41 (38)	
CUR64	1 layer of 13mm **masta**shield	42 (38)	42 (36)	
CUR66	1 layer of 10mm **sound**shield or **opal**	42 (49)	42 (37)	
CUR67	2 layers of 10mm **sound**shield or **opal**	43 (41)	43 (40)	
CUR68	1 layer of 13mm **sound**shield	42 (40)	42 (38)	
CUR69	2 layers of 13mm **sound**shield	45 (44)	46 (43)	

CUR70-CUR79

- Sheet metal roofing
- Sisalation® Metal Roof Sarking
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- A-clips and Furring Channel
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]

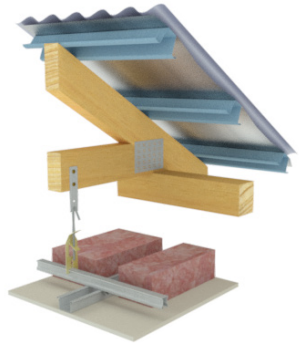


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR70	1 layer of 10mm **masta**shield or **span**shield	49 (41)	48 (39)	Report Day Design 5008-27
CUR71	2 layers of 10mm **masta**shield or **span**shield	51 (44)	50 (42)	
CUR74	1 layer of 13mm **masta**shield	51 (43)	50 (41)	
CUR76	1 layer of 10mm **sound**shield or **opal**	52 (44)	51 (42)	
CUR77	2 layers of 10mm **sound**shield or **opal**	53 (47)	53 (45)	
CUR78	1 layer of 13mm **sound**shield	53 (45)	52 (43)	
CUR79	2 layers of 13mm **sound**shield	56 (50)	56 (48)	

CUR90-CUR99

- Sheet metal roofing
- Sisalation® Metal Roof Sarking
- Timber or steel, rafters, purlins or trusses
- Suspended Top Cross Rail and Furring Channel
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]

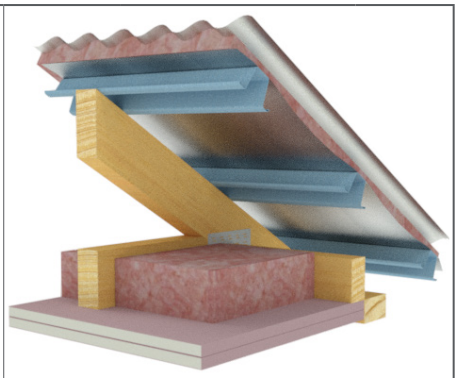


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
CUR90	1 layer of 10mm **masta**shield or **span**shield	49 (41)	48 (39)	Report Day Design 5008-27
CUR91	2 layers of 10mm **masta**shield or **span**shield	51 (44)	50 (43)	
CUR94	1 layer of 13mm **masta**shield	51 (43)	50 (41)	
CUR96	1 layer of 10mm **sound**shield or **opal**	52 (44)	51 (42)	
CUR97	2 layers of 10mm **sound**shield or **opal**	53 (47)	53 (45)	
CUR98	1 layer of 13mm **sound**shield	53 (45)	52 (43)	
CUR99	2 layers of 13mm **sound**shield	56 (50)	56 (48)	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR210-CUR218

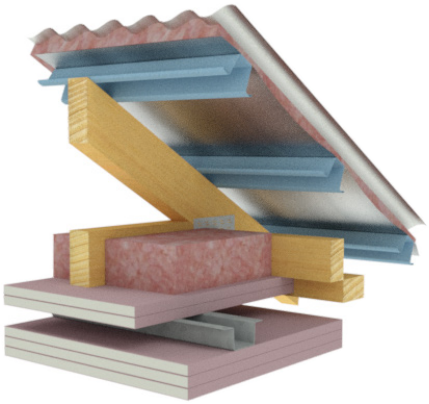
- Sheet metal roofing
- Permastop® Building Blanket minimum R1.3 with Sisalation® reflective facing foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Ceiling insulation as specified in the table (not required for FRL)
- Plasterboard ceiling lining as specified in the table



fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		
Report FC14332					Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
30/30/30	-	CUR210	1 layer of 13mm **fire**shield	600	43 (39)	43 (38)	
60/60/60	-	CUR211	2 layers of 13mm **fire**shield	450	45 (44)	44 (43)	
60/60/60	-	CUR212	1 layer of 16mm **fire**shield	450	44 (41)	43 (39)	Report Day Design 5008-24 3094-50
60/60/60	60	CUR213	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	46 (45)	47 (44)	
60/60/60	60	CUR214	2 layers of 16mm **fire**shield	600	48 (46)	48 (45)	
90/90/90	60	CUR215	2 layers of 16mm **fire**shield	450	48 (46)	48 (45)	
90/90/90	60	CUR216	3 layers of 13mm **fire**shield	450	49 (48)	50 (46)	
120/120/120	60	CUR217	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	50 (49)	51 (47)	
120/120/120	60	CUR218	3 layers of 16mm **fire**shield	450	52 (50)	52 (49)	

CUR500



- Sheet metal roofing
- Permastop® Building Blanket minimum R1.3 with Sisalation® reflective facing foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Ceiling insulation as specified in the table (not required for FRL)
- 2 layers of 16mm **fire**shield
- Perpendicular top-hats or furring channels at maximum 450mm centres
- [Below] 3 layers of 16mm **fire**shield

Fire Resistance Level

180/180/180
from below only

RISF 180 minutes

Report FC14332

Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

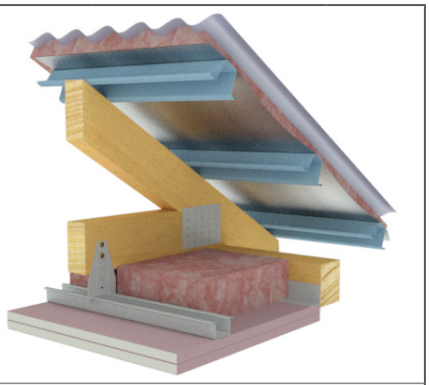
Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
64 (**52**)	64 (**52**)	Report INSUL v9

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR220-CUR228

- Sheet metal roofing
- Permastop® Building Blanket minimum R1.3 with Sisalation® reflective facing foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- A-clips and Furring Channel
- Ceiling insulation as specified in the table (not required for FRL)
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]
fireshield can be substituted with **multi**shield or **tru**rock

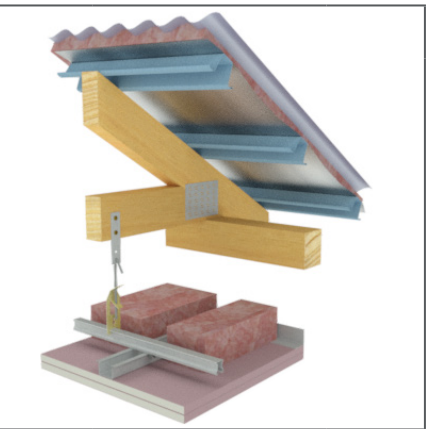


FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		
Report FC14332					Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
30/30/30	-	CUR220	1 layer of 13mm **fire**shield	600	51 (42)	50 (41)	
60/60/60	-	CUR221	2 layers of 13mm **fire**shield	450	55 (48)	55 (46)	
60/60/60	-	CUR222	1 layer of 16mm **fire**shield	450	52 (43)	51 (42)	Report Day Design 5008-24 3094-50 [1]TL458Rn
60/60/60	60	CUR223	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	56 (49)	55 (47)	
60/60/60	60	CUR224	2 layers of 16mm **fire**shield	600	57 (**50**)[1]	56 (48)	
90/90/90	60	CUR225	2 layers of 16mm **fire**shield	450	57 (**50**)	56 (48)	
90/90/90	60	CUR226	3 layers of 13mm **fire**shield	450	58 (**52**)	58 (**50**)	
120/120/120	60	CUR227	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	59 (**53**)	59 (**51**)	
120/120/120	60	CUR228	3 layers of 16mm **fire**shield	450	61 (**55**)	61 (**53**)	

CUR240-CUR248

- Sheet metal roofing
- Permastop® Building Blanket minimum R1.3 with Sisalation® reflective facing foil
- Timber or steel, rafters, purlins or trusses
- Ceiling insulation as specified in the table (not required for FRL)
- Suspended Top Cross Rail and Furring Channel
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]
fireshield can be substituted with **multi**shield or **tru**rock

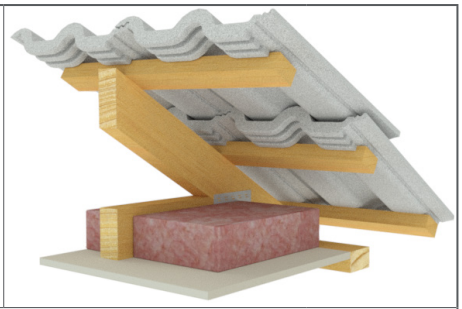


FRL Rated from below	RISF	System	Ceiling Lining	Max Framing Centres (mm)	Airborne Sound Insulation Rw (Rw + Ctr)		
Report FC14332					Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
30/30/30	-	CUR240	1 layer of 13mm **fire**shield	600	50 (43)	49 (41)	
60/60/60	-	CUR241	2 layers of 13mm **fire**shield	450	54 (47)	53 (46)	
60/60/60	-	CUR242	1 layer of 16mm **fire**shield	450	51 (43)	50 (42)	Report Day Design 5008-24 3094-50
60/60/60	60	CUR243	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	55 (49)	54 (47)	
60/60/60	60	CUR244	2 layers of 16mm **fire**shield	600	56 (**50**)	55 (48)	
90/90/90	60	CUR245	2 layers of 16mm **fire**shield	450	56 (**50**)	55 (48)	
90/90/90	60	CUR246	3 layers of 13mm **fire**shield	450	57 (**52**)	57 (**50**)	
120/120/120	60	CUR247	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	59 (**53**)	58 (**51**)	
120/120/120	60	CUR248	3 layers of 16mm **fire**shield	450	60 (**55**)	60 (**53**)	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR110-CUR119

- Concrete or terracotta tiles
- Optional heavy duty reflective foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Insulation as specified in the table
- Plasterboard ceiling lining as specified in the table

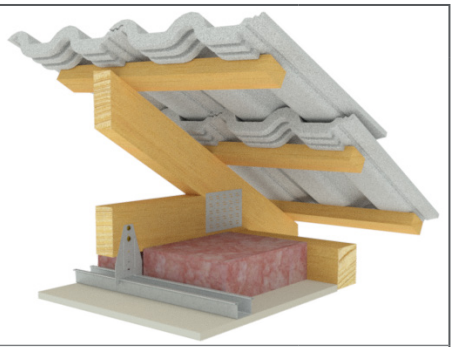


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	Report
CUR110	1 layer of 10mm **masta**shield or **span**shield	50 (41)	50 (40)	Day Design 5008-24 3094-25
CUR111	2 layers of 10mm **masta**shield or **span**shield	51 (42)	51 (41)	
CUR114	1 layer of 13mm **masta**shield	51 (42)	51 (41)	
CUR116	1 layer of 10mm **sound**shield or **opal**	51 (43)	51 (42)	
CUR117	2 layers of 10mm **sound**shield or **opal**	51 (44)[1]	51 (44)	
CUR118	1 layer of 13mm **sound**shield	51 (42)	51 (42)	[1] TL458Ra
CUR119	2 layers of 13mm **sound**shield	52 (44)	52 (44)	

CUR120-CUR129

- Concrete or terracotta tiles
- Optional heavy duty reflective foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- A-clips and Furring Channel
- Insulation as specified in the table (not required for FRL)
- Plasterboard ceiling lining as specified in the table

[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]

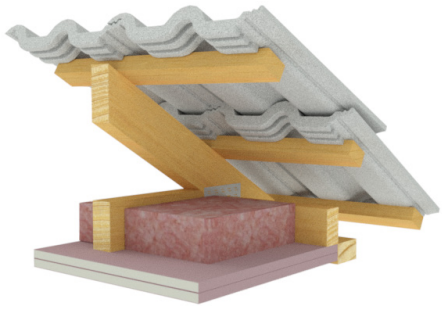


System	Ceiling Lining	Airborne Sound Insulation Rw (Rw + Ctr)		
		Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	Report
CUR120	1 layer of 10mm **masta**shield or **span**shield	51 (44)	50 (43)	Day Design 5008-24 3094-25
CUR121	2 layers of 10mm **masta**shield or **span**shield	52 (46)	52 (46)	
CUR124	1 layer of 13mm **masta**shield	52 (45)	51 (44)	
CUR126	1 layer of 10mm **sound**shield or **opal**	52 (46)[1]	51 (45)	
CUR127	2 layers of 10mm **sound**shield or **opal**	52 (47)	52 (48)	
CUR128	1 layer of 13mm **sound**shield	52 (46)	52 (45)	[1]TL458Rb
CUR129	2 layers of 13mm **sound**shield	53 (49)	53 (48)	

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR310-CUR318

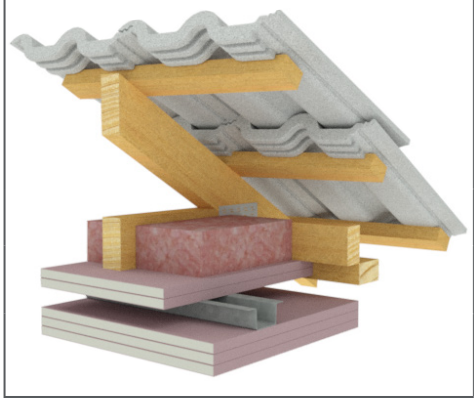
- Concrete or terracotta tiles
- Optional heavy duty reflective foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- Insulation as specified in the table (not required for FRL)
- Plasterboard ceiling lining as specified in the table



fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	**RISF**	**System**	**Ceiling Lining**	**Max Framing Centres (mm)**	**Airborne Sound Insulation Rw (Rw + Ctr)**		
Report FC14332					Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
30/30/30	-	CUR310	1 layer of 13mm **fire**shield	600	48 (42)	48 (42)	
60/60/60	-	CUR311	2 layers of 13mm **fire**shield	450	50 (44)	50 (44)	
60/60/60	-	CUR312	1 layer of 16mm **fire**shield	450	48 (43)	48 (42)	Report Day Design 5008-24 3094-50 [1]TL458RI
60/60/60	60	CUR313	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	50 (44)	50 (44)	
60/60/60	60	CUR314	2 layers of 16mm **fire**shield	600	51 (45)	51 (45)	
90/90/90	60	CUR315	2 layers of 16mm **fire**shield	450	51 (45)[1]	51 (45)	
90/90/90	60	CUR316	3 layers of 13mm **fire**shield	450	52 (46)	52 (46)	
120/120/120	60	CUR317	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	52 (46)	52 (46)	
120/120/120	60	CUR318	3 layers of 16mm **fire**shield	450	52 (46)	52 (46)	

CUR501



- Concrete or terracotta tiles
- Optional heavy duty reflective foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- 2 layers of 16mm **fire**shield
- Perpendicular top-hats or furring channels at maximum 450mm centres
- [Below] 3 layers of 16mm **fire**shield

Fire Resistance Level

180/180/180
from below only

RISF 180 minutes

Report FC14332

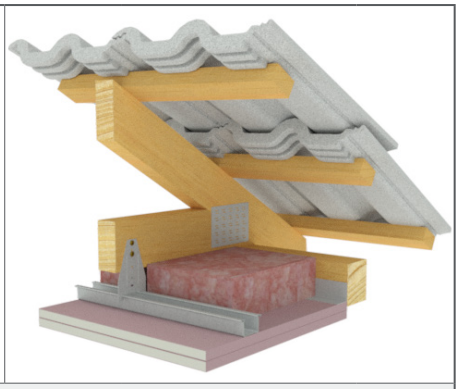
Sound Insulation for framing at 450mm centres
Rw (Rw + Ctr)

Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
62 (**51**)	62 (**51**)	Report INSUL v9

Insulation shown is the minimum required to meet the acoustic rating. Refer to Chapter 2 for more information.

CUR320-CUR328

- Concrete or terracotta tiles
- Optional heavy duty reflective foil
- Minimum 140mm cavity with timber or steel, rafters, purlins or trusses
- A-clips and Furring Channel
- Insulation as specified in the table (not required for FRL)
- Plasterboard ceiling lining as specified in the table



[Lateral restraint of truss bottom chord must be considered, ie: bottom chord ties and steelbrace]
fireshield can be substituted with **multi**shield or **tru**rock

FRL Rated from below	**RISF**	**System**	**Ceiling Lining**	**Max Framing Centres (mm)**	**Airborne Sound Insulation Rw (Rw + Ctr)**		
Report FC14332					Pink® Batts Ceiling R2.5	Polyester Batts Ceiling R2.5	
30/30/30	-	CUR320	1 layer of 13mm **fire**shield	600	51 (45)	51 (44)	
60/60/60	-	CUR321	2 layers of 13mm **fire**shield	450	52 (47)	52 (47)	
60/60/60	-	CUR322	1 layer of 16mm **fire**shield	450	51 (46)	51 (45)	Report Day Design 5008-24 3094-50 [1]TL458Rc
60/60/60	60	CUR323	1 layer of 13mm **fire**shield applied first plus 1 layer of 16mm **fire**shield	600	53 (48)	53 (47)	
60/60/60	60	CUR324	2 layers of 16mm **fire**shield	600	54 (49)[1]	54 (48)	
90/90/90	60	CUR325	2 layers of 16mm **fire**shield	450	54 (49)	54 (48)	
90/90/90	60	CUR326	3 layers of 13mm **fire**shield	450	55 (49)	55 (49)	
120/120/120	60	CUR327	1 layer of 13mm **fire**shield applied first plus 2 layers of 16mm **fire**shield	450	55 (50)	55 (50)	
120/120/120	60	CUR328	3 layers of 16mm **fire**shield	450	56 (51)	56 (50)	

General Requirements

	Non-Fire Rated	Fire Rated
Install control joints in plasterboard ceilings: > At 12m maximum intervals for internal ceilings > At 6m maximum intervals for external ceilings > At all movement joints in the building > 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 masta**base** or masta**longset**.		✓
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.		✓
fireshield may be substituted with **multi**shield, **impact**shield, **tru**rock and **tru**rock HD of the same or greater thickness and maintain fire performance.		✓

> 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/–/–.

> Compensate for uneven framing by attaching a furring channel system with adjustable direct fix clips.

> Timber trusses may settle or move with changing seasons. Reduce occurrence of plasterboard cracking due to this movement by fixing plasterboard to furring channel or battens.

> 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 and salt laden air 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 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 system table and 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 *AS/NZS 1170.2 Wind Actions* and *AS/NZS 2785 Suspended Ceilings - Design and Installation.*	✓	✓
Stagger joins in adjacent Top Cross Rails and Furring Channels by 1200mm	✓	✓
Install additional framing members around openings.	✓	✓

Siniat Internal Wind Load Calculator

Timber battens are not permitted in fire rated ceilings.

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 unless using an 80mm wide Universal Bracket (UB80).

Table 2 Maximum Span (Framing Spacing) for Plasterboard Ceilings

Plasterboard Type	General Internal Areas	Areas of Intermittent High Humidity eg. Unventilated Bathrooms, Basements and External Ceilings
10mm **masta**shield	450mm	-
13mm **masta**shield	600mm	450mm
10mm **span**shield	600mm	450mm
10mm **opal**	600mm	450mm
10mm and 13mm **sound**shield	600mm	450mm
10mm and 13mm **water**shield	600mm	450mm
13mm and 16mm **fire**shield	600mm	450mm
13mm and 16mm **multi**shield	600mm	450mm
13mm and 16mm **tru**rock	600mm	450mm
13mm **tru**rock hd	600mm	450mm

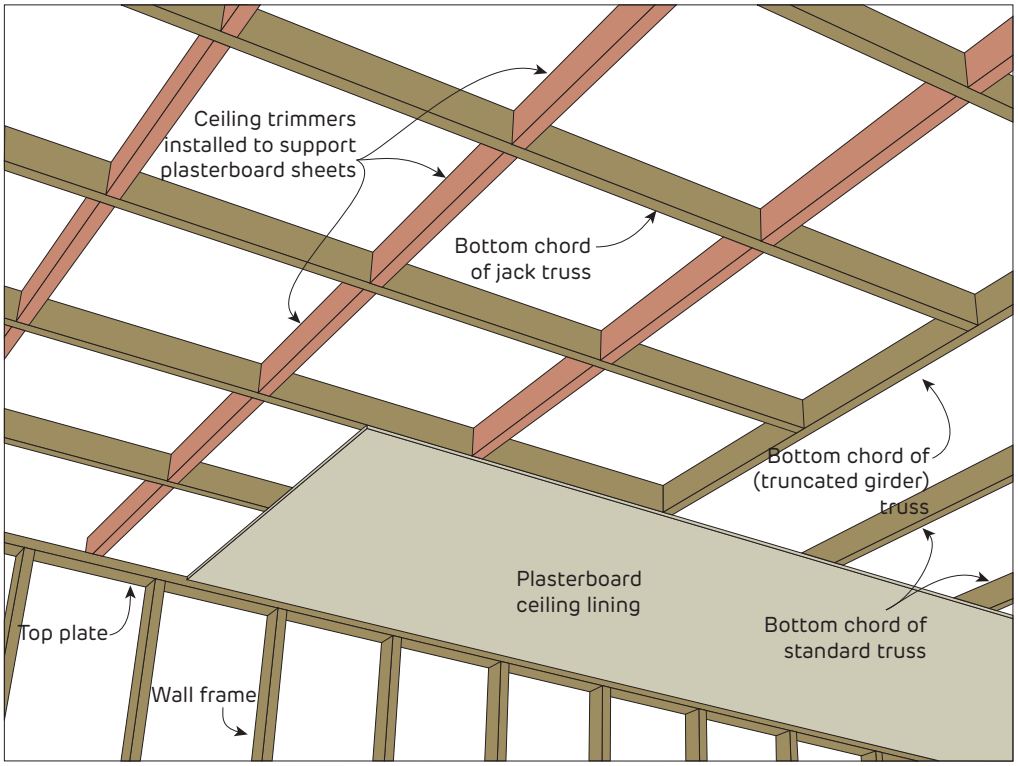


FIGURE 1 **Trimmers to Support Ceiling Lining at Change of Truss Direction**
Perspective

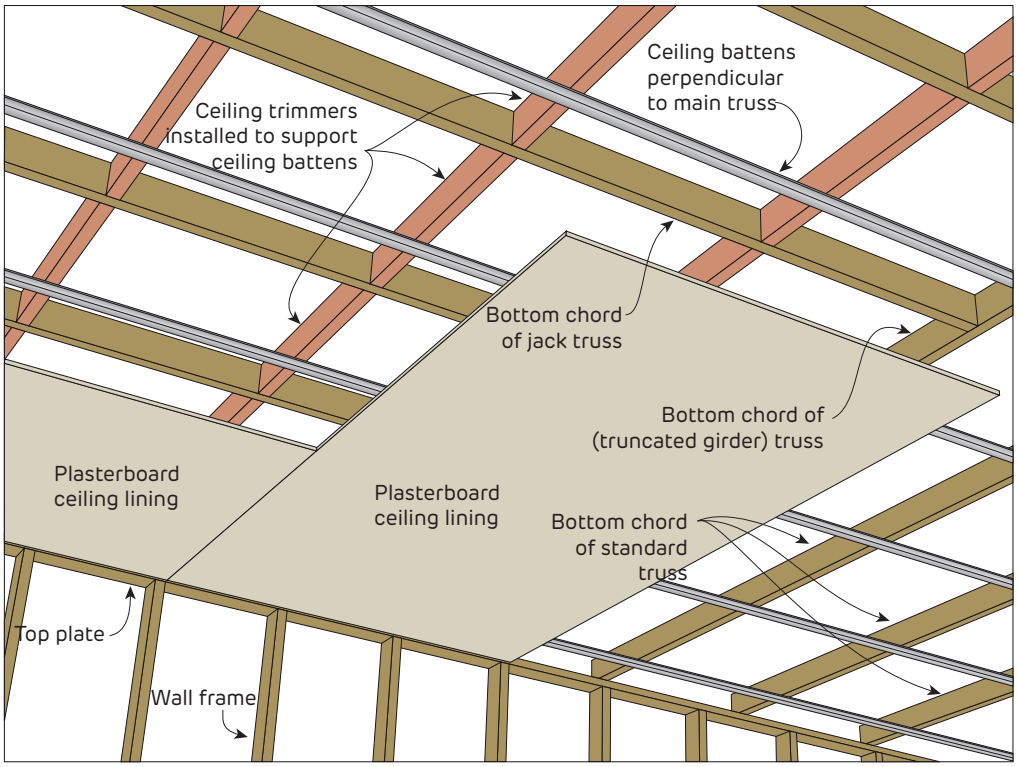


FIGURE 2 **Trimmers to Support Ceiling Battens at Change of Truss Direction**
Perspective

Fire Rated and Non-Fire Rated
Internal Direct Fix Ceiling Frames

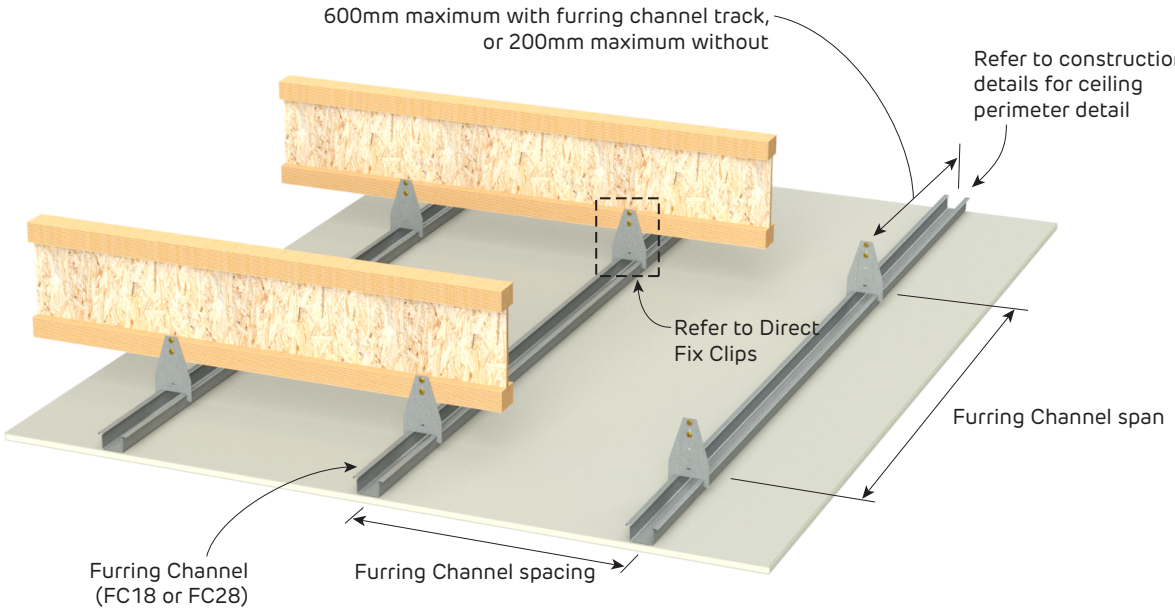


FIGURE 3 Direct Fix Furring Channel Ceiling Frame
Fire rated and Non-fire rated
Perspective

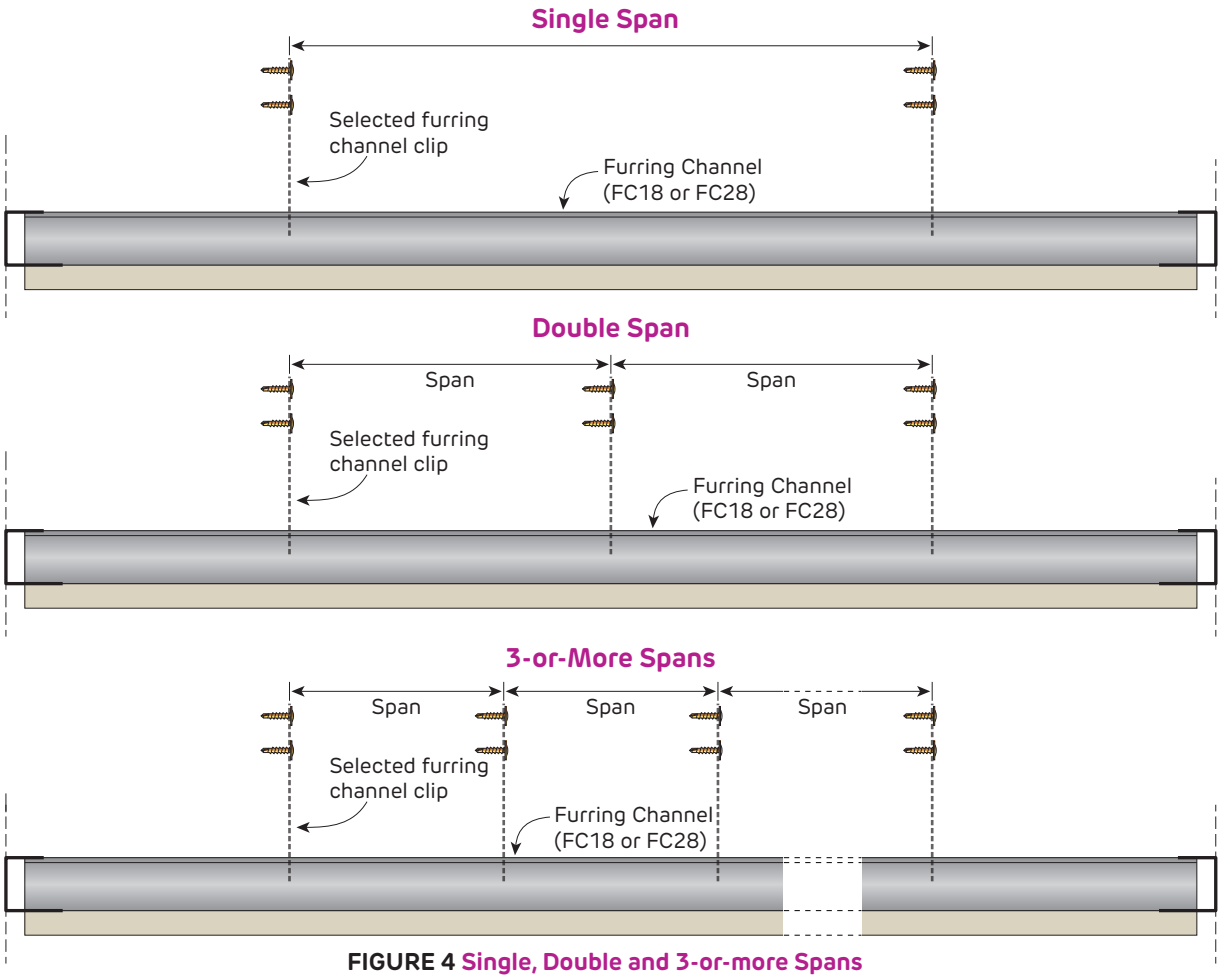
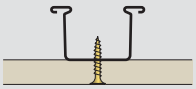


FIGURE 4 Single, Double and 3-or-more Spans
Section

Table 3 28mm Furring Channel Ceiling Span Table - REGION A

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

28mm Furring Channel (AFC28) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.39
			Serviceability pressure W_S (kPa)	0.25

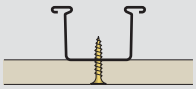
Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	1270	0.21	1700	0.70	1570	0.59
	450	1390	0.17	1870	0.58	1720	0.49
	400	1450	0.16	1940	0.54	1790	0.46
	300	1590	0.13	2130	0.45	1970	0.38
2 layers of 10mm	600	1180	0.23	1590	0.78	1460	0.65
	450	1300	0.19	1740	0.64	1610	0.54
	400	1350	0.18	1810	0.59	1670	0.50
	300	1480	0.15	1990	0.49	1840	0.42
1 layer of 13mm	600	1230	0.22	1640	0.74	1520	0.62
	450	1350	0.18	1810	0.61	1670	0.52
	400	1400	0.17	1880	0.57	1730	0.48
	300	1540	0.14	2060	0.47	1900	0.40
2 layers of 13mm	600	1120	0.25	1500	0.84	1390	0.71
	450	1230	0.21	1650	0.70	1520	0.59
	400	1280	0.19	1720	0.65	1580	0.54
	300	1410	0.16	1890	0.53	1740	0.45
3 layers of 13mm	600	1010	0.27	1360	0.91	1250	0.77
	450	1110	0.22	1490	0.75	1370	0.63
	400	1150	0.21	1550	0.70	1430	0.59
	300	1270	0.17	1700	0.58	1570	0.49
1 layer of 16mm	600	1220	0.22	1640	0.75	1510	0.63
	450	1340	0.18	1800	0.62	1660	0.52
	400	1390	0.17	1870	0.57	1720	0.48
	300	1530	0.14	2050	0.47	1890	0.40
2 layers of 16mm	600	1110	0.25	1490	0.85	1370	0.72
	450	1220	0.21	1640	0.71	1510	0.60
	400	1270	0.19	1700	0.65	1570	0.55
	300	1390	0.16	1870	0.54	1730	0.46
3 layers of 16mm	600	990	0.27	1330	0.92	1230	0.78
	450	1090	0.23	1460	0.76	1350	0.64
	400	1130	0.21	1520	0.70	1400	0.59
	300	1250	0.17	1670	0.58	1540	0.49

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation*.
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Siniat Internal Wind Load Calculator

Table 4 28mm Furring Channel Ceiling Span Table - REGION A

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

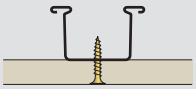
28mm Furring Channel (AFC28) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.46
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	1210	0.23	1630	0.76	1500	0.64
	450	1330	0.19	1790	0.63	1650	0.53
	400	1390	0.17	1860	0.58	1720	0.49
	300	1520	0.14	2040	0.48	1890	0.41
2 layers of 10mm	600	1140	0.25	1530	0.83	1410	0.70
	450	1250	0.20	1680	0.69	1550	0.58
	400	1300	0.19	1750	0.64	1610	0.54
	300	1430	0.16	1920	0.53	1770	0.44
1 layer of 13mm	600	1180	0.24	1580	0.79	1460	0.67
	450	1290	0.20	1740	0.66	1600	0.55
	400	1350	0.18	1810	0.61	1670	0.51
	300	1480	0.15	1980	0.50	1830	0.42
2 layers of 13mm	600	1090	0.27	1460	0.89	1340	0.75
	450	1190	0.22	1600	0.74	1480	0.62
	400	1240	0.20	1670	0.69	1540	0.58
	300	1360	0.17	1830	0.57	1690	0.48
3 layers of 13mm	600	1010	0.29	1360	0.98	1250	0.83
	450	1110	0.24	1490	0.81	1370	0.68
	400	1150	0.22	1550	0.75	1430	0.63
	300	1270	0.19	1700	0.62	1570	0.52
1 layer of 16mm	600	1170	0.24	1570	0.80	1450	0.67
	450	1290	0.20	1730	0.66	1590	0.56
	400	1340	0.18	1800	0.61	1660	0.52
	300	1470	0.15	1970	0.51	1820	0.43
2 layers of 16mm	600	1080	0.27	1450	0.91	1330	0.76
	450	1180	0.22	1590	0.75	1470	0.63
	400	1230	0.21	1650	0.69	1520	0.58
	300	1350	0.17	1820	0.57	1680	0.48
3 layers of 16mm	600	990	0.29	1330	0.99	1230	0.83
	450	1090	0.24	1460	0.81	1350	0.69
	400	1130	0.22	1520	0.76	1400	0.64
	300	1250	0.19	1670	0.62	1540	0.53

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 5 28mm Furring Channel Ceiling Span Table - REGION B

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

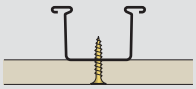
28mm Furring Channel (AFC28) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.59
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	1240	0.28	1530	0.56	1550	0.80
	450	1390	0.24	1770	0.49	1720	0.67
	400	1450	0.22	1880	0.46	1790	0.62
	300	1590	0.18	2130	0.61	1970	0.51
2 layers of 10mm	600	1160	0.30	1450	0.93	1450	0.85
	450	1300	0.25	1670	0.80	1610	0.71
	400	1350	0.23	1770	0.76	1670	0.65
	300	1480	0.19	1990	0.64	1840	0.54
1 layer of 13mm	600	1200	0.29	1500	0.90	1500	0.82
	450	1350	0.24	1730	0.78	1670	0.69
	400	1400	0.22	1830	0.73	1730	0.64
	300	1540	0.19	2060	0.62	1900	0.53
2 layers of 13mm	600	1100	0.31	1380	0.98	1380	0.90
	450	1230	0.26	1590	0.85	1520	0.74
	400	1280	0.24	1680	0.80	1580	0.69
	300	1410	0.20	1890	0.68	1740	0.57
3 layers of 13mm	600	1010	0.33	1280	1.05	1250	0.94
	450	1110	0.27	1480	0.91	1370	0.77
	400	1150	0.25	1550	0.85	1430	0.72
	300	1270	0.21	1700	0.70	1570	0.59
1 layer of 16mm	600	1190	0.29	1490	0.90	1490	0.83
	450	1340	0.24	1720	0.78	1660	0.69
	400	1390	0.23	1820	0.74	1720	0.64
	300	1530	0.19	2050	0.63	1890	0.53
2 layers of 16mm	600	1090	0.32	1360	0.98	1360	0.90
	450	1220	0.27	1570	0.85	1510	0.75
	400	1270	0.25	1670	0.81	1570	0.69
	300	1390	0.20	1870	0.68	1730	0.58
3 layers of 16mm	600	990	0.33	1260	1.06	1230	0.94
	450	1090	0.28	1460	0.92	1350	0.78
	400	1130	0.25	1520	0.85	1400	0.72
	300	1250	0.21	1670	0.71	1540	0.60

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation*.
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 6 28mm Furring Channel Ceiling Span Table - REGION B

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

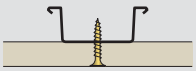
28mm Furring Channel (AFC28) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.71
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	1150	0.30	1370	0.63	1430	0.86
	450	1320	0.26	1590	0.54	1650	0.74
	400	1390	0.24	1690	0.51	1720	0.69
	300	1520	0.20	1950	0.44	1890	0.57
2 layers of 10mm	600	1090	0.32	1360	0.99	1360	0.91
	450	1250	0.27	1560	0.86	1550	0.78
	400	1300	0.25	1660	0.81	1610	0.72
	300	1430	0.21	1910	0.70	1770	0.60
1 layer of 13mm	600	1120	0.31	1400	0.97	1400	0.88
	450	1290	0.27	1610	0.83	1600	0.76
	400	1350	0.25	1710	0.79	1670	0.70
	300	1480	0.21	1970	0.68	1830	0.58
2 layers of 13mm	600	1040	0.33	1300	1.04	1300	0.95
	450	1190	0.29	1490	0.90	1480	0.81
	400	1240	0.27	1580	0.85	1540	0.75
	300	1360	0.22	1830	0.74	1690	0.62
3 layers of 13mm	600	970	0.35	1210	1.10	1220	1.02
	450	1110	0.30	1400	0.96	1370	0.86
	400	1150	0.28	1490	0.91	1430	0.80
	300	1270	0.23	1700	0.78	1570	0.66
1 layer of 16mm	600	1110	0.31	1390	0.97	1390	0.88
	450	1280	0.27	1600	0.84	1590	0.76
	400	1340	0.25	1700	0.79	1660	0.71
	300	1470	0.21	1960	0.69	1820	0.58
2 layers of 16mm	600	1030	0.33	1290	1.05	1290	0.96
	450	1180	0.29	1480	0.90	1470	0.82
	400	1230	0.27	1570	0.85	1520	0.76
	300	1350	0.22	1810	0.74	1680	0.63
3 layers of 16mm	600	960	0.36	1200	1.12	1200	1.02
	450	1090	0.30	1390	0.97	1350	0.86
	400	1130	0.28	1470	0.91	1400	0.80
	300	1250	0.23	1670	0.78	1540	0.66

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 7 18mm Furring Channel Ceiling Span Table - REGION A

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

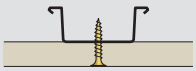
18mm Furring Channel (AFC18) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.39
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	860	0.14	1160	0.48	1070	0.40
	450	950	0.12	1270	0.39	1170	0.33
	400	980	0.11	1320	0.37	1220	0.31
	300	1080	0.09	1450	0.30	1340	0.26
2 layers of 10mm	600	800	0.16	1080	0.53	990	0.44
	450	880	0.13	1180	0.43	1090	0.37
	400	920	0.12	1230	0.40	1140	0.34
	300	1010	0.10	1350	0.33	1250	0.28
1 layer of 13mm	600	830	0.15	1120	0.50	1030	0.42
	450	910	0.12	1230	0.41	1130	0.35
	400	950	0.11	1280	0.38	1180	0.32
	300	1040	0.09	1400	0.32	1290	0.27
2 layers of 13mm	600	760	0.17	1020	0.57	940	0.48
	450	840	0.14	1120	0.47	1030	0.40
	400	870	0.13	1170	0.44	1080	0.37
	300	950	0.11	1280	0.36	1180	0.30
3 layers of 13mm	600	680	0.18	920	0.62	850	0.52
	450	750	0.15	1010	0.51	930	0.43
	400	780	0.14	1050	0.47	970	0.40
	300	860	0.12	1160	0.39	1070	0.33
1 layer of 16mm	600	830	0.15	1110	0.50	1020	0.42
	450	910	0.12	1220	0.42	1120	0.35
	400	940	0.11	1270	0.39	1170	0.33
	300	1040	0.10	1390	0.32	1290	0.27
2 layers of 16mm	600	750	0.17	1010	0.58	930	0.49
	450	830	0.14	1110	0.48	1030	0.40
	400	860	0.13	1160	0.44	1070	0.37
	300	950	0.11	1270	0.37	1170	0.31
3 layers of 16mm	600	670	0.18	900	0.62	830	0.52
	450	740	0.15	990	0.51	920	0.44
	400	770	0.14	1030	0.47	950	0.40
	300	850	0.12	1140	0.39	1050	0.33

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation*.
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 8 18mm Furring Channel Ceiling Span Table - REGION A

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

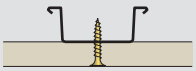
18mm Furring Channel (AFC18) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.46
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	820	0.15	1110	0.52	1020	0.43
	450	910	0.13	1220	0.43	1120	0.36
	400	940	0.12	1260	0.39	1170	0.33
	300	1030	0.10	1390	0.33	1280	0.28
2 layers of 10mm	600	770	0.17	1040	0.56	960	0.48
	450	850	0.14	1140	0.46	1050	0.39
	400	880	0.13	1190	0.43	1100	0.36
	300	970	0.11	1310	0.36	1200	0.30
1 layer of 13mm	600	800	0.16	1070	0.54	990	0.45
	450	880	0.13	1180	0.44	1090	0.38
	400	910	0.12	1230	0.41	1130	0.35
	300	1000	0.10	1350	0.34	1240	0.29
2 layers of 13mm	600	740	0.18	990	0.61	910	0.51
	450	810	0.15	1090	0.50	1000	0.42
	400	840	0.14	1130	0.46	1040	0.39
	300	930	0.11	1240	0.38	1150	0.32
3 layers of 13mm	600	680	0.20	920	0.66	850	0.56
	450	750	0.16	1010	0.55	930	0.46
	400	780	0.15	1050	0.51	970	0.43
	300	860	0.12	1160	0.42	1070	0.36
1 layer of 16mm	600	790	0.16	1070	0.54	980	0.45
	450	870	0.13	1170	0.45	1080	0.38
	400	910	0.12	1220	0.41	1120	0.35
	300	1000	0.10	1340	0.34	1240	0.29
2 layers of 16mm	600	730	0.18	980	0.61	900	0.51
	450	800	0.15	1080	0.51	1000	0.43
	400	840	0.14	1120	0.47	1030	0.39
	300	920	0.12	1230	0.39	1140	0.33
3 layers of 16mm	600	670	0.20	900	0.67	830	0.56
	450	740	0.16	990	0.55	920	0.47
	400	770	0.15	1030	0.51	950	0.43
	300	850	0.13	1140	0.42	1050	0.36

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 9 18mm Furring Channel Ceiling Span Table - REGION B

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

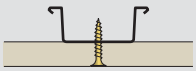
18mm Furring Channel (AFC18) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.59
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	860	0.19	1100	0.62	1070	0.55
	450	950	0.16	1270	0.54	1170	0.45
	400	980	0.15	1320	0.50	1220	0.42
	300	1080	0.12	1450	0.41	1340	0.35
2 layers of 10mm	600	800	0.20	1030	0.66	990	0.58
	450	880	0.17	1180	0.57	1090	0.48
	400	920	0.16	1230	0.53	1140	0.45
	300	1010	0.13	1350	0.43	1250	0.37
1 layer of 13mm	600	830	0.20	1070	0.64	1030	0.56
	450	910	0.16	1230	0.55	1130	0.46
	400	950	0.15	1280	0.51	1180	0.43
	300	1040	0.13	1400	0.42	1290	0.36
2 layers of 13mm	600	760	0.22	980	0.69	940	0.61
	450	840	0.18	1120	0.60	1030	0.50
	400	870	0.16	1170	0.55	1080	0.47
	300	950	0.14	1280	0.46	1180	0.38
3 layers of 13mm	600	680	0.22	910	0.75	850	0.64
	450	750	0.18	1010	0.62	930	0.52
	400	780	0.17	1050	0.58	970	0.49
	300	860	0.14	1160	0.48	1070	0.40
1 layer of 16mm	600	830	0.20	1060	0.64	1020	0.56
	450	910	0.17	1220	0.55	1120	0.47
	400	940	0.15	1270	0.51	1170	0.43
	300	1040	0.13	1390	0.42	1290	0.36
2 layers of 16mm	600	750	0.22	970	0.70	930	0.61
	450	830	0.18	1110	0.60	1030	0.51
	400	860	0.17	1160	0.56	1070	0.47
	300	950	0.14	1270	0.46	1170	0.39
3 layers of 16mm	600	670	0.22	900	0.75	830	0.64
	450	740	0.19	990	0.62	920	0.53
	400	770	0.17	1030	0.58	950	0.49
	300	850	0.14	1140	0.48	1050	0.40

1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation*.
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 10 18mm Furring Channel Ceiling Span Table - REGION B

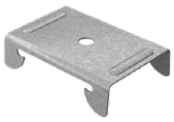
Refer to Section 2.3 for assistance determining the relevant wind pressures for a specific project.

18mm Furring Channel (AFC18) Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.71
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Single Span		Double Span		3-or-more Spans	
		Span (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)	Spans (mm)	Connection Demand (kN)
1 layer of 10mm	600	820	0.21	1020	0.67	1020	0.61
	450	910	0.18	1180	0.58	1120	0.50
	400	940	0.16	1250	0.55	1170	0.47
	300	1030	0.14	1390	0.46	1280	0.38
2 layers of 10mm	600	770	0.22	970	0.71	960	0.64
	450	850	0.19	1120	0.61	1050	0.53
	400	880	0.17	1190	0.58	1100	0.49
	300	970	0.14	1310	0.48	1200	0.40
1 layer of 13mm	600	800	0.22	1000	0.69	990	0.62
	450	880	0.18	1150	0.59	1090	0.52
	400	910	0.17	1220	0.56	1130	0.48
	300	1000	0.14	1350	0.47	1240	0.39
2 layers of 13mm	600	740	0.24	920	0.73	910	0.66
	450	810	0.19	1070	0.64	1000	0.55
	400	840	0.18	1130	0.60	1040	0.51
	300	930	0.15	1240	0.50	1150	0.42
3 layers of 13mm	600	680	0.25	870	0.79	850	0.71
	450	750	0.20	1000	0.68	930	0.58
	400	780	0.19	1050	0.64	970	0.54
	300	860	0.16	1160	0.53	1070	0.45
1 layer of 16mm	600	790	0.22	990	0.69	980	0.62
	450	870	0.18	1150	0.60	1080	0.52
	400	910	0.17	1210	0.56	1120	0.48
	300	1000	0.14	1340	0.47	1240	0.40
2 layers of 16mm	600	730	0.24	920	0.75	900	0.67
	450	800	0.20	1060	0.65	1000	0.56
	400	840	0.18	1120	0.61	1030	0.51
	300	920	0.15	1230	0.50	1140	0.43
3 layers of 16mm	600	670	0.25	860	0.80	830	0.70
	450	740	0.21	990	0.69	920	0.59
	400	770	0.19	1030	0.64	950	0.54
	300	850	0.16	1140	0.53	1050	0.45

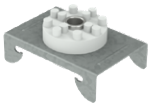
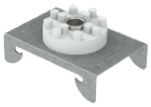
1. Table refers to Siniat furring channel of Base Metal Thickness (BMT) 0.42mm of grade G550 steel with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m.
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) pressure and serviceability (Ws) deflection limits stated, intended for internal use only.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Direct Fix Ceiling* or *Ceiling Clip Capacity - Resilient Mounts* Tables.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. Table includes self weight and 2 kg/m^2 insulation weight with an additional 3 kg/m^2 service load. No further allowance for additional point loads or live loads.
6. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
7. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
8. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$
   Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
9. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit.
   Serviceability Limit State Load Case 2: G + Ws, with deflection limited to Span/200.
10. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
11. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
12. For BCA Building Importance Level 4, please contact Siniat.

Table 11 Ceiling Clip Capacity - Direct Fix Ceiling Frames

Image	Name	Code	ULS Design Capacity (kN)
	A Clip 80mm drop (standard and wide version)	C26-80	1.23
		CW26-80	
	A Clip 180mm drop (standard and wide version)	C26-180	1.23
		CW26-180	
	Spring Adjustable A Clip	C52	1.23
	Anchor Clip (standard and wide versions)	C37-7H (7.5mm hole)	1.69
		CW37-7H (7.5mm hole)	
		C37-9H (9mm hole)	
		CW37-9H (9mm hole)	
	Anchor Clip M6 thread	C37-M6	1.69
	Grip Clip	CGRIP (6.5mm holes)	1.24 when fixed through hole closest to teeth
		CGRIP-9 (9mm holes)	
	Grip Clip Long	CGRIP-LONG (6.5mm holes)	0.69 when fixed through hole closest to teeth
		CGRIP-LONG9 (9mm holes)	
	Adjustable Mount, with 7mm holes suitable for screws	CFCAM	0.79
	Purlin to Furring Channel Resilient Clip	C001-PC	1.69

1. Clip capacities are applicable to Siniat products only.
2. Clip capacities determined in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*, Section 8.2.
3. Suitable for internal use only.

Table 12 Ceiling Clip Capacity - Resilient Mounts

Image	Name	Code	ULS Design Capacity (kN)
	Resilient Mount, with 6.5mm hole suitable for screws	C001	1.69
	Resilient Mount, with M6 thread	C001M6	1.69
	Resilient Adjustable Mount, with 6.5mm hole suitable for screws	CFCRESAM	0.79

1. Clip capacities are applicable to Siniat products only.
2. Clip capacities determined in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*, Section 8.2.
3. Suitable for internal use only.

Fire Rated and Non-Fire Rated
Internal Suspended Ceiling Frames

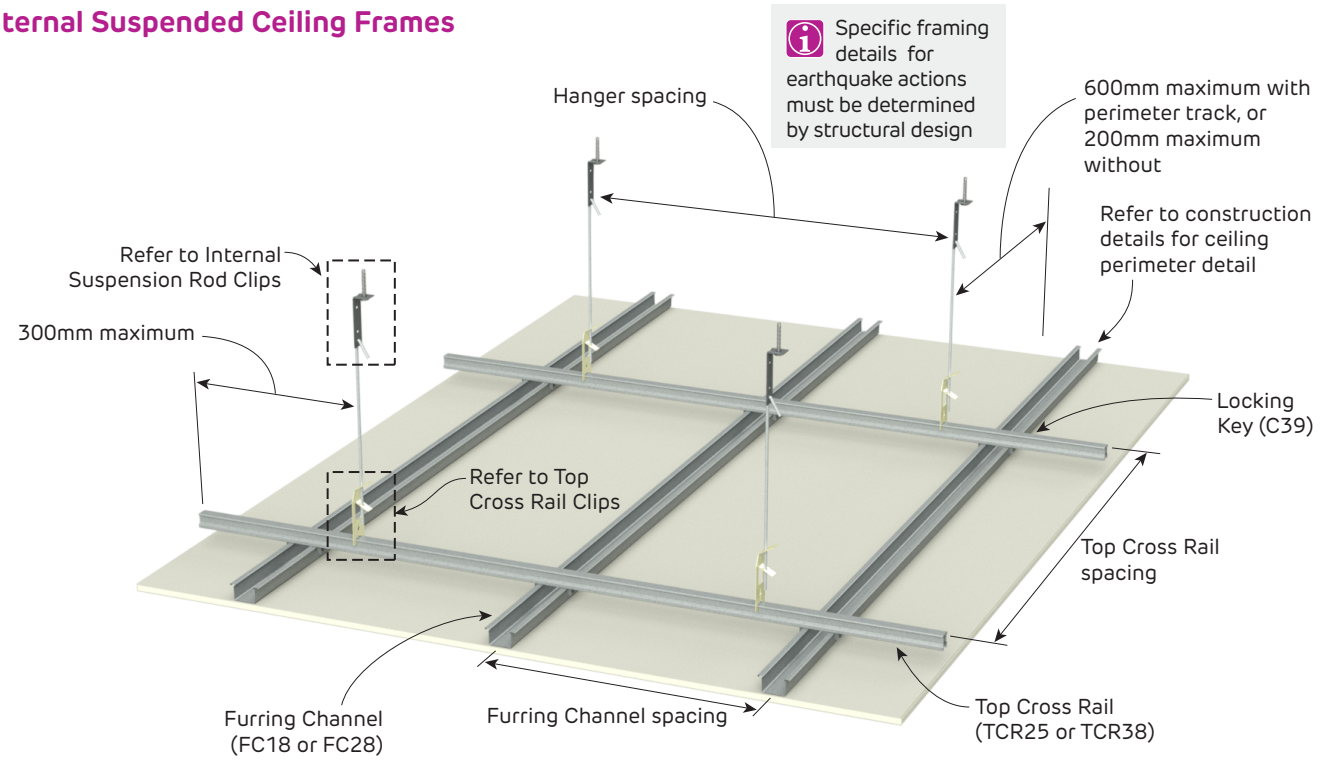


FIGURE 5 Suspended Ceiling Frame
Fire rated and Non-fire rated
Perspective

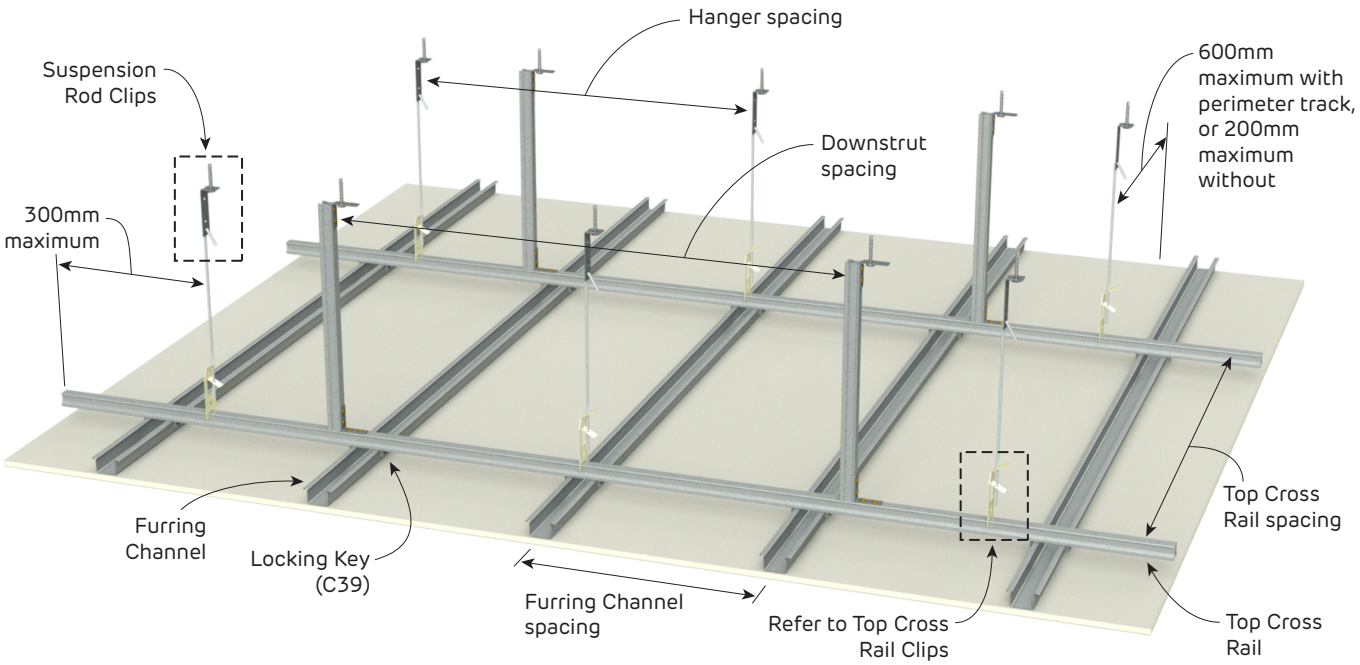


FIGURE 6 Suspended Ceiling Frame with Downstruts
Fire rated and Non-fire rated
Perspective

Fire Rated and Non-Fire Rated
Internal Suspended Ceiling Frames

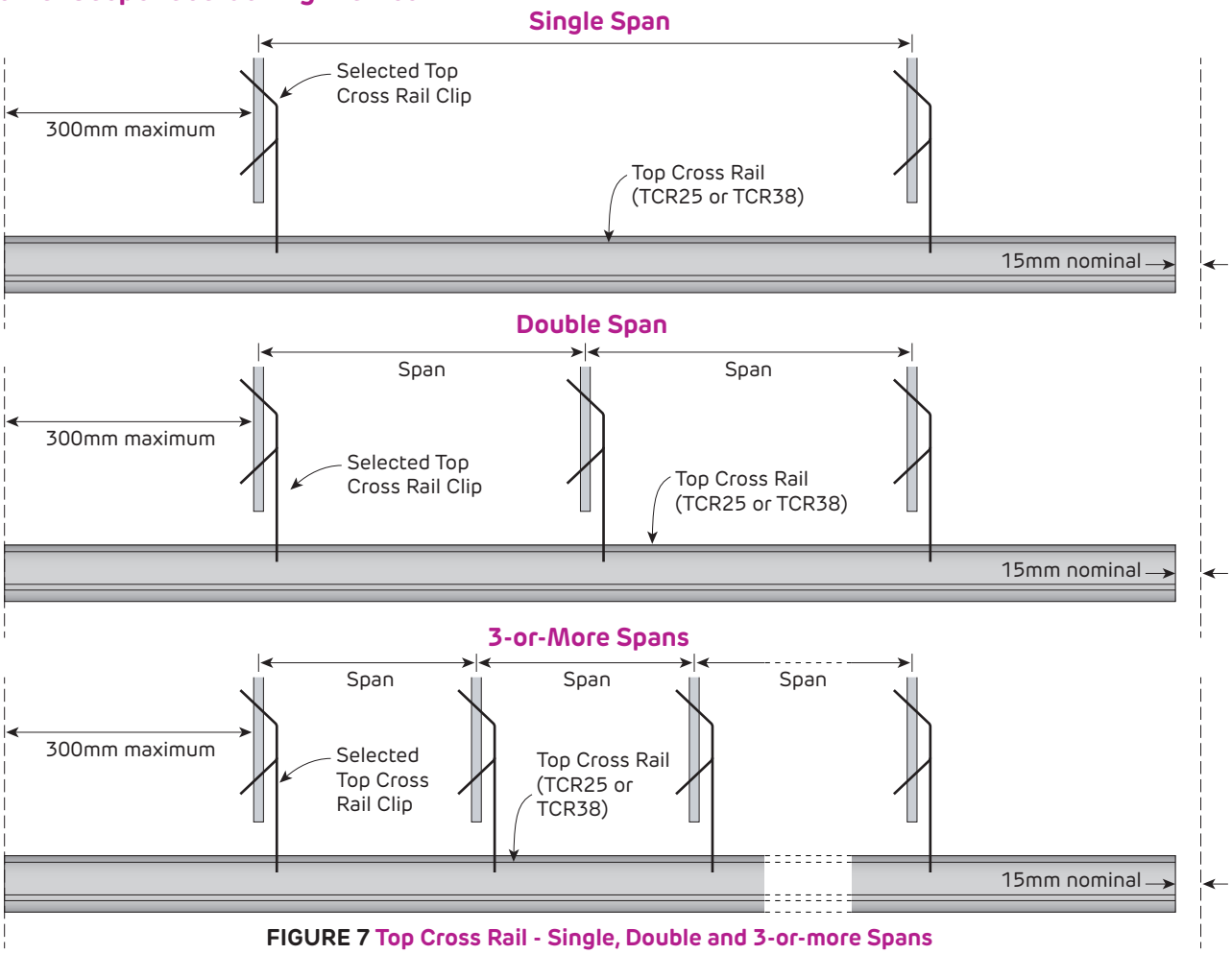


FIGURE 7 Top Cross Rail - Single, Double and 3-or-more Spans
Section

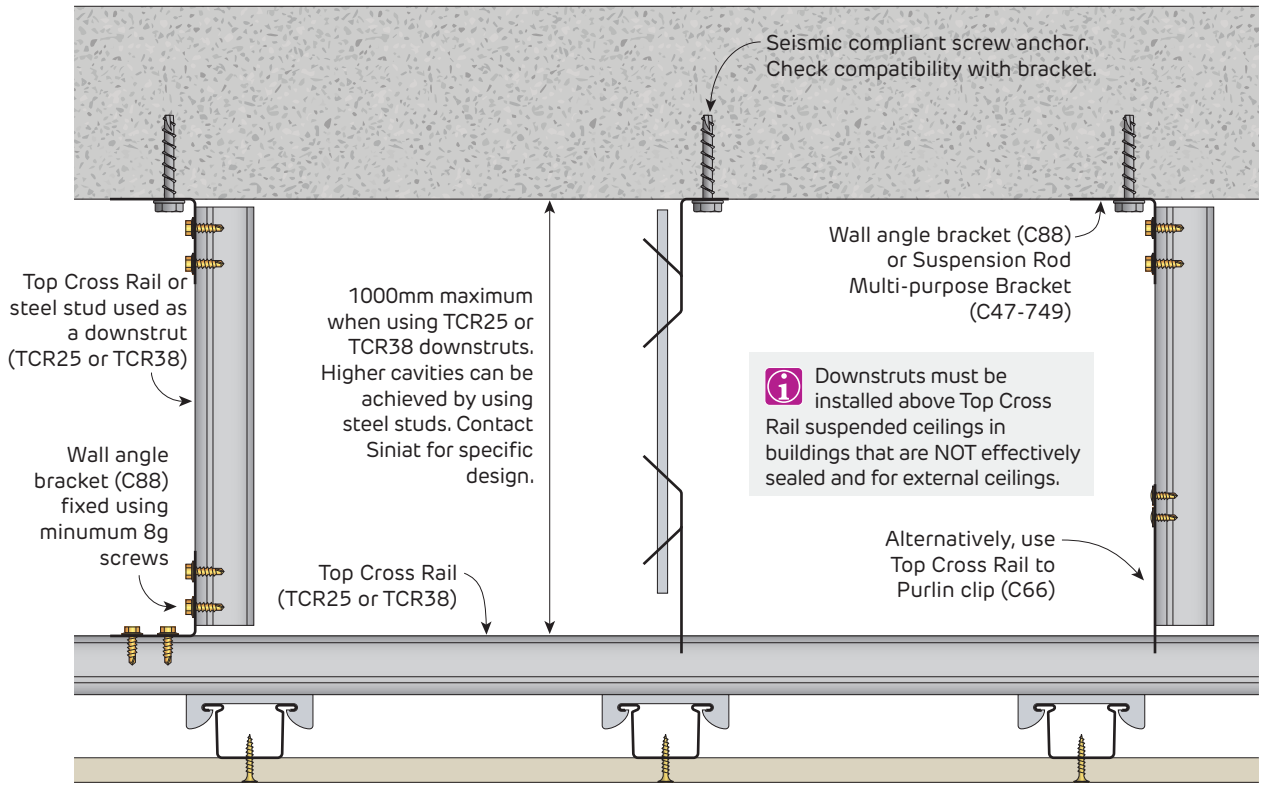


FIGURE 8 Downstrut
Section

Fire Rated and Non-Fire Rated
Internal Suspended Ceiling Frames

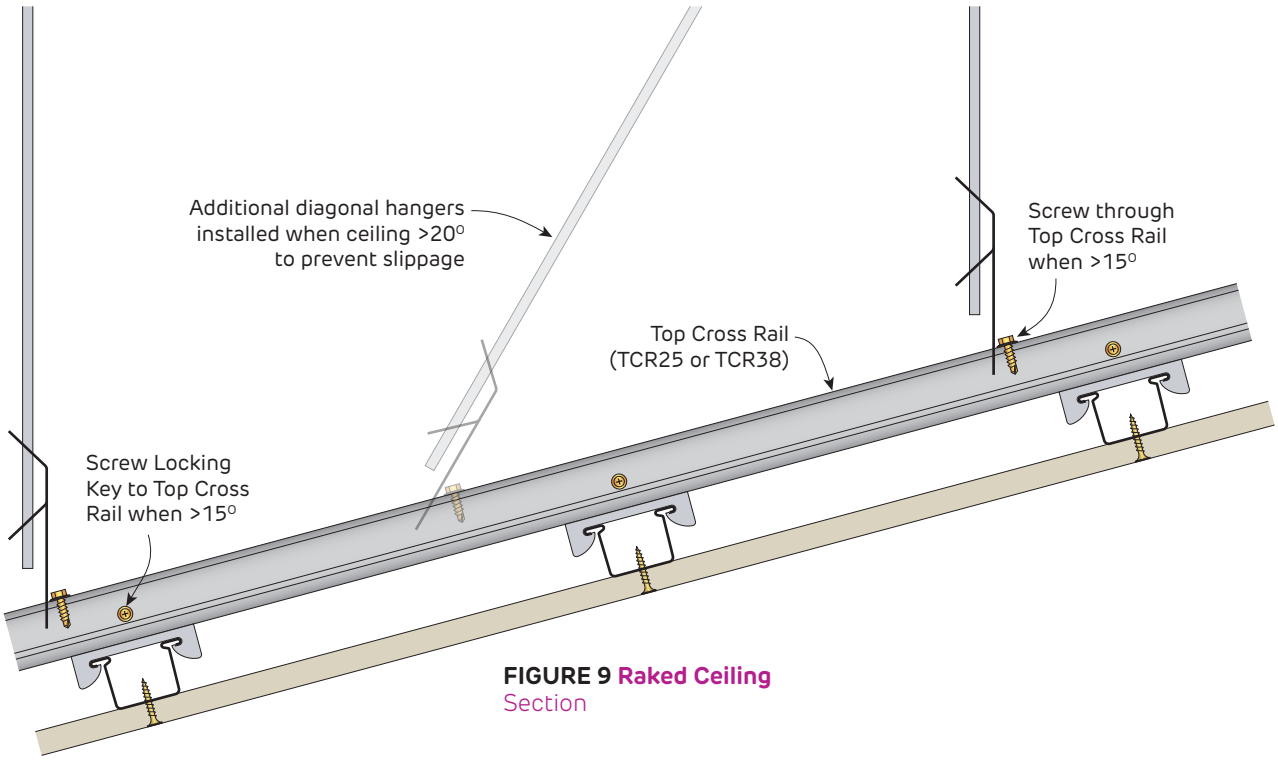


FIGURE 9 Raked Ceiling
Section

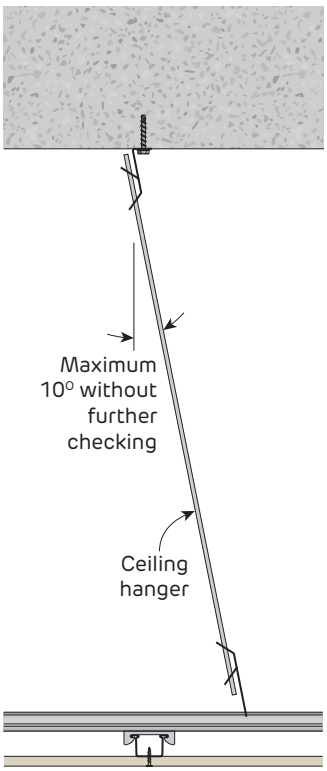
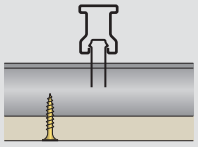


FIGURE 10 Angled Hanger
Section

Table 13 25mm Top Cross Rail Ceiling Span Table - REGION A

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

25mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.39
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1220	0.46	1010	0.95	1090	0.94
		1050	1150	0.51	940	1.03	1010	1.02
		1200	1080 FC28	0.54	880 FC28	1.10	950 FC28	1.09
	450	900	1220	0.46	1080	1.02	1170	1.01
		1050	1150	0.51	1000	1.10	1080	1.09
		1200	1080 FC28	0.54	930 FC28	1.17	1010 FC28	1.16
2 layers of 10mm	600	900	1080	0.48	930	1.04	1010	1.03
		1050	1030 FC28	0.53	860 FC28	1.12	930 FC28	1.10
		1200	990 FC28	0.59	810 FC28	1.20	870 FC28	1.18
	450	900	1080	0.48	990	1.11	1070	1.09
		1050	1030	0.54	920	1.20	990	1.18
		1200	980 FC28	0.58	860 FC28	1.28	930 FC28	1.26
1 layer of 13mm	600	900	1180	0.48	970	0.99	1050	0.98
		1050	1110 FC28	0.53	900 FC28	1.07	970 FC28	1.06
		1200	1040 FC28	0.57	840 FC28	1.14	910 FC28	1.13
	450	900	1170	0.48	1040	1.07	1120	1.05
		1050	1100	0.53	960	1.15	1040	1.14
		1200	1040 FC28	0.57	900 FC28	1.23	970 FC28	1.21
2 layers of 13mm	600	900	970	0.49	870	1.11	940	1.09
		1050	920 FC28	0.55	810 FC28	1.20	870 FC28	1.18
		1200	880 FC28	0.60	750 FC28	1.27	820 FC28	1.27
	450	900	970	0.50	930	1.19	1000	1.17
		1050	920 FC28	0.55	860 FC28	1.28	930 FC28	1.26
		1200	880 FC28	0.60	800 FC28	1.36	870 FC28	1.35
3 layers of 13mm	600	900	860 FC28	0.52	800 FC28	1.22	860 FC28	1.20
		1050	820 FC28	0.58	740 FC28	1.31	800 FC28	1.30
		1200	780 FC28	0.63	690 FC28	1.40	740 FC28	1.37
	450	750	910	0.46	930	1.18	1010	1.18
		900	860	0.52	850	1.30	920	1.28
		1050	810 FC28	0.58	790 FC28	1.40	850 FC28	1.38
1 layer of 16mm	600	900	1160	0.48	970	1.01	1040	0.99
		1050	1100 FC28	0.53	890 FC28	1.08	970 FC28	1.07
		1200	1030 FC28	0.57	840 FC28	1.16	900 FC28	1.13
	450	900	1160	0.48	1030	1.07	1110	1.06
		1050	1100	0.53	950	1.15	1030	1.14
		1200	1030 FC28	0.57	890 FC28	1.23	960 FC28	1.22
2 layers of 16mm	600	900	950	0.49	860	1.12	930	1.11
		1050	910 FC28	0.55	800 FC28	1.21	860 FC28	1.19
		1200	870 FC28	0.60	750 FC28	1.30	810 FC28	1.28
	450	900	950	0.50	920	1.20	990	1.18
		1050	900 FC28	0.55	850 FC28	1.29	920 FC28	1.28
		1200	870 FC28	0.60	800 FC28	1.39	860 FC28	1.37
3 layers of 16mm	600	900	840 FC28	0.53	790 FC28	1.24	850 FC28	1.22
		1050	800 FC28	0.58	730 FC28	1.33	790 FC28	1.32
		1200	770 FC28	0.64	680 FC28	1.42	730 FC28	1.39
	450	750	890	0.47	920	1.20	990	1.18
		900	840	0.53	840	1.32	910	1.30
		1050	800 FC28	0.58	780 FC28	1.43	840 FC28	1.40

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

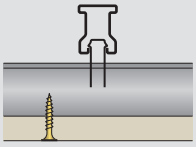
Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions.*
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 14 25mm Top Cross Rail Ceiling Span Table - REGION B

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

25mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.59
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1070	0.55	870	1.11	940	1.10
		1050	990	0.59	800	1.19	870	1.19
		1200	930 FC28	0.63	750 FC28	1.28	810 FC28	1.26
	450	900	1070	0.55	930	1.20	1000	1.18
		1050	990	0.59	860	1.29	930	1.27
		1200	930 FC28	0.64	800 FC28	1.37	870 FC28	1.36
2 layers of 10mm	600	900	1010	0.59	810	1.18	880	1.17
		1050	930 FC28	0.63	750 FC28	1.27	820 FC28	1.27
		1200	870 FC28	0.67	710 FC28	1.37	760 FC28	1.34
	450	900	1010	0.59	870	1.27	940	1.25
		1050	930	0.63	810	1.37	870	1.35
		1200	870 FC28	0.67	750 FC28	1.45	810 FC28	1.44
1 layer of 13mm	600	750	1130	0.51	920	1.04	1000	1.04
		900	1040	0.57	840	1.14	910	1.13
		1050	960 FC28	0.61	780 FC28	1.24	840 FC28	1.22
	450	900	1040	0.57	900	1.23	970	1.21
		1050	960	0.61	830	1.32	900	1.31
		1200	900 FC28	0.65	780 FC28	1.42	840 FC28	1.39
2 layers of 13mm	600	750	1030	0.55	850	1.14	920	1.13
		900	960	0.62	770	1.24	840	1.24
		1050	890 FC28	0.67	720 FC28	1.35	770 FC28	1.32
	450	750	1030	0.55	900	1.21	980	1.21
		900	950	0.61	830	1.34	890	1.31
		1050	880 FC28	0.66	760 FC28	1.43	830 FC28	1.43
3 layers of 13mm	600	750	910	0.56	790	1.23	850	1.21
		900	860 FC28	0.64	720 FC28	1.34	780 FC28	1.33
		1050	820 FC28	0.71	670 FC28	1.45	720 FC28	1.43
	450	750	910	0.57	840	1.31	910	1.29
		900	860	0.64	770	1.43	830	1.41
		1050	810 FC28	0.70	710 FC28	1.54	770 FC28	1.53
1 layer of 16mm	600	750	1130	0.52	920	1.06	990	1.04
		900	1030	0.57	840	1.15	910	1.14
		1050	960 FC28	0.62	780 FC28	1.25	840 FC28	1.23
	450	900	1030	0.57	890	1.23	970	1.22
		1050	960	0.62	830	1.33	890	1.31
		1200	900 FC28	0.66	770 FC28	1.41	840 FC28	1.41
2 layers of 16mm	600	750	1010	0.55	840	1.15	910	1.14
		900	950	0.62	770	1.26	830	1.24
		1050	880 FC28	0.67	710 FC28	1.36	770 FC28	1.34
	450	750	1010	0.55	900	1.23	970	1.22
		900	950	0.62	820	1.35	880	1.32
		1050	880 FC28	0.67	760 FC28	1.45	820 FC28	1.44
3 layers of 16mm	600	750	900	0.57	780	1.24	840	1.22
		900	840 FC28	0.64	710 FC28	1.35	770 FC28	1.34
		1050	800 FC28	0.71	660 FC28	1.46	710 FC28	1.44
	450	750	890	0.57	830	1.32	900	1.31
		900	840	0.64	760	1.45	820	1.43
		1050	800 FC28	0.71	700 FC28	1.55	760 FC28	1.54

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

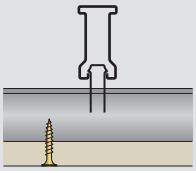
Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 15 38mm Top Cross Rail Ceiling Span Table - REGION A

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

38mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.39
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1590	0.60	1200	1.14	1290	1.12
		1050	1500	0.66	1110	1.22	1200	1.21
		1200	1420 FC28	0.71	1040 FC28	1.31	1120 FC28	1.29
	450	900	1590	0.61	1290	1.23	1390	1.21
		1050	1490	0.66	1190	1.32	1290	1.31
		1200	1420 FC28	0.72	1120 FC28	1.42	1210 FC28	1.40
2 layers of 10mm	600	900	1490	0.67	1100	1.23	1190	1.22
		1050	1400 FC28	0.73	1020 FC28	1.33	1100 FC28	1.31
		1200	1320 FC28	0.78	950 FC28	1.41	1030 FC28	1.40
	450	900	1490	0.67	1180	1.32	1280	1.31
		1050	1400	0.73	1100	1.44	1190	1.42
		1200	1320 FC28	0.79	1030 FC28	1.54	1110 FC28	1.51
1 layer of 13mm	600	900	1540	0.63	1150	1.18	1240	1.16
		1050	1450 FC28	0.69	1060 FC28	1.27	1150 FC28	1.26
		1200	1370 FC28	0.75	1000 FC28	1.36	1080 FC28	1.35
	450	900	1540	0.63	1240	1.28	1340	1.26
		1050	1450	0.70	1140	1.37	1240	1.36
		1200	1370 FC28	0.75	1070 FC28	1.47	1160 FC28	1.45
2 layers of 13mm	600	900	1380	0.70	1030	1.31	1110	1.29
		1050	1310 FC28	0.78	950 FC28	1.41	1030 FC28	1.40
		1200	1250 FC28	0.85	890 FC28	1.51	960 FC28	1.49
	450	900	1370	0.70	1110	1.42	1200	1.40
		1050	1310 FC28	0.78	1030 FC28	1.54	1110 FC28	1.51
		1200	1250 FC28	0.85	960 FC28	1.63	1040 FC28	1.62
3 layers of 13mm	600	900	1220 FC28	0.74	940 FC28	1.43	1020 FC28	1.42
		1050	1160 FC28	0.82	870 FC28	1.55	940 FC28	1.53
		1200	1110 FC28	0.90	810 FC28	1.64	880 FC28	1.63
	450	750	1290	0.66	1110	1.42	1200	1.40
		900	1220	0.75	1010	1.54	1100	1.54
		1050	1160 FC28	0.83	940 FC28	1.67	1010 FC28	1.65
1 layer of 16mm	600	900	1530	0.64	1140	1.19	1230	1.17
		1050	1440 FC28	0.70	1060 FC28	1.28	1140 FC28	1.26
		1200	1360 FC28	0.75	990 FC28	1.37	1070 FC28	1.35
	450	900	1530	0.64	1230	1.29	1330	1.27
		1050	1440	0.70	1140	1.39	1230	1.37
		1200	1360 FC28	0.76	1060 FC28	1.47	1150 FC28	1.46
2 layers of 16mm	600	900	1360	0.71	1020	1.33	1100	1.31
		1050	1290 FC28	0.78	940 FC28	1.43	1020 FC28	1.42
		1200	1230 FC28	0.85	880 FC28	1.53	950 FC28	1.51
	450	900	1350	0.71	1100	1.44	1180	1.41
		1050	1290 FC28	0.79	1020 FC28	1.55	1100 FC28	1.53
		1200	1230 FC28	0.86	950 FC28	1.65	1030 FC28	1.64
3 layers of 16mm	600	900	1200 FC28	0.75	930 FC28	1.46	1000 FC28	1.43
		1050	1140 FC28	0.83	860 FC28	1.57	930 FC28	1.55
		1200	1090 FC28	0.91	800 FC28	1.67	860 FC28	1.64
	450	750	1270	0.67	1090	1.43	1180	1.42
		900	1200	0.75	1000	1.57	1080	1.55
		1050	1140 FC28	0.83	930 FC28	1.70	1000 FC28	1.67

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

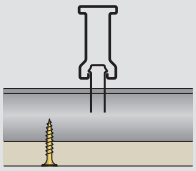
Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions.*
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 16 38mm Top Cross Rail Ceiling Span Table - REGION A

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

38mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.46
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1520	0.65	1130	1.20	1220	1.19
		1050	1430 FC28	0.71	1040 FC28	1.29	1130 FC28	1.28
		1200	1350 FC28	0.76	980 FC28	1.39	1060 FC28	1.37
	450	1050	1420	0.71	1120	1.40	1210	1.38
		1200	1350 FC28	0.77	1050 FC28	1.49	1140 FC28	1.48
		1350	1280 FC28	0.82	990 FC28	1.58	1070 FC28	1.56
2 layers of 10mm	600	900	1430	0.71	1050	1.30	1130	1.28
		1050	1340 FC28	0.77	970 FC28	1.40	1050 FC28	1.38
		1200	1270 FC28	0.83	910 FC28	1.49	980 FC28	1.47
	450	900	1430	0.71	1130	1.40	1220	1.38
		1050	1340	0.77	1040	1.50	1130	1.49
		1200	1270 FC28	0.84	980 FC28	1.62	1060 FC28	1.60
1 layer of 13mm	600	900	1470	0.67	1090	1.25	1180	1.24
		1050	1390 FC28	0.74	1010 FC28	1.35	1090 FC28	1.33
		1200	1310 FC28	0.80	940 FC28	1.43	1020 FC28	1.42
	450	900	1470	0.68	1170	1.34	1260	1.32
		1050	1380	0.74	1080	1.44	1170	1.43
		1200	1310 FC28	0.80	1010 FC28	1.54	1100 FC28	1.54
2 layers of 13mm	600	900	1360	0.76	990	1.38	1060	1.35
		1050	1280 FC28	0.83	910 FC28	1.48	980 FC28	1.45
		1200	1200 FC28	0.89	850 FC28	1.58	920 FC28	1.56
	450	900	1360	0.76	1060	1.48	1150	1.47
		1050	1270 FC28	0.83	980 FC28	1.60	1060 FC28	1.58
		1200	1200 FC28	0.89	920 FC28	1.71	990 FC28	1.68
3 layers of 13mm	600	900	1220 FC28	0.80	910 FC28	1.49	980 FC28	1.47
		1050	1160 FC28	0.89	840 FC28	1.61	900 FC28	1.58
		1200	1110 FC28	0.97	780 FC28	1.70	840 FC28	1.68
	450	750	1290	0.71	1070	1.47	1160	1.46
		900	1220	0.80	980	1.61	1060	1.60
		1050	1160 FC28	0.89	900 FC28	1.73	980 FC28	1.72
1 layer of 16mm	600	900	1470	0.68	1080	1.25	1170	1.24
		1050	1380 FC28	0.74	1000 FC28	1.35	1080 FC28	1.33
		1200	1300 FC28	0.80	940 FC28	1.45	1010 FC28	1.42
	450	900	1460	0.68	1160	1.35	1260	1.34
		1050	1380	0.75	1080	1.46	1160	1.44
		1200	1300 FC28	0.80	1010 FC28	1.56	1090 FC28	1.54
2 layers of 16mm	600	900	1350	0.77	980	1.39	1050	1.37
		1050	1260 FC28	0.83	900 FC28	1.49	970 FC28	1.47
		1200	1190 FC28	0.90	840 FC28	1.59	910 FC28	1.57
	450	900	1350	0.77	1050	1.50	1130	1.47
		1050	1260 FC28	0.84	970 FC28	1.61	1050 FC28	1.60
		1200	1190 FC28	0.90	910 FC28	1.73	980 FC28	1.70
3 layers of 16mm	600	900	1200 FC28	0.81	890 FC28	1.50	960 FC28	1.48
		1050	1140 FC28	0.90	830 FC28	1.63	890 FC28	1.60
		1200	1090 FC28	0.98	770 FC28	1.73	830 FC28	1.70
	450	750	1270	0.72	1060	1.50	1140	1.47
		900	1200	0.81	960	1.62	1040	1.61
		1050	1140 FC28	0.90	890 FC28	1.75	970 FC28	1.75

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

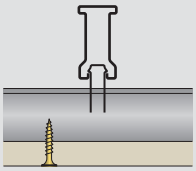
Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 17 38mm Top Cross Rail Ceiling Span Table - REGION B

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

38mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.59
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1410	0.72	1030	1.32	1110	1.30
		1050	1320	0.79	950	1.42	1030	1.41
		1200	1250 FC28	0.85	890 FC28	1.52	960 FC28	1.50
	450	1050	1320	0.79	1020	1.53	1110	1.52
		1200	1250 FC28	0.86	960 FC28	1.65	1030 FC28	1.61
		1350	1180 FC28	0.91	900 FC28	1.73	980 FC28	1.73
2 layers of 10mm	600	900	1340	0.78	960	1.40	1040	1.38
		1050	1250 FC28	0.85	890 FC28	1.51	960 FC28	1.49
		1200	1180 FC28	0.91	830 FC28	1.61	900 FC28	1.59
	450	900	1330	0.78	1040	1.52	1120	1.49
		1050	1250	0.85	960	1.63	1040	1.62
		1200	1180 FC28	0.92	900 FC28	1.75	970 FC28	1.72
1 layer of 13mm	600	900	1370	0.75	1000	1.36	1080	1.35
		1050	1290 FC28	0.82	920 FC28	1.46	990 FC28	1.44
		1200	1220 FC28	0.89	860 FC28	1.56	930 FC28	1.54
	450	900	1370	0.75	1070	1.46	1160	1.45
		1050	1290	0.82	990	1.58	1070	1.56
		1200	1210 FC28	0.88	930 FC28	1.69	1000 FC28	1.66
2 layers of 13mm	600	900	1280	0.83	910	1.47	990	1.46
		1050	1200 FC28	0.90	840 FC28	1.58	910 FC28	1.56
		1200	1130 FC28	0.97	790 FC28	1.70	850 FC28	1.67
	450	900	1280	0.83	990	1.60	1070	1.58
		1050	1200 FC28	0.90	910 FC28	1.71	990 FC28	1.71
		1200	1130 FC28	0.97	810 FC28	1.74	890 FC28	1.75
3 layers of 13mm	600	750	1290	0.80	930	1.45	1010	1.44
		900	1200 FC28	0.89	850 FC28	1.58	920 FC28	1.57
		1050	1120 FC28	0.97	780 FC28	1.69	850 FC28	1.69
	450	750	1290	0.80	1000	1.56	1090	1.55
		900	1200	0.90	920	1.72	990	1.69
		1050	1120 FC28	0.97	800 FC28	1.74	880 FC28	1.75
1 layer of 16mm	600	900	1370	0.76	990	1.36	1070	1.35
		1050	1280 FC28	0.82	920 FC28	1.48	990 FC28	1.45
		1200	1210 FC28	0.89	860 FC28	1.58	920 FC28	1.54
	450	900	1360	0.75	1070	1.48	1150	1.45
		1050	1280	0.82	990	1.59	1070	1.58
		1200	1210 FC28	0.89	920 FC28	1.69	1000 FC28	1.68
2 layers of 16mm	600	900	1270	0.83	910	1.49	980	1.47
		1050	1190 FC28	0.91	840 FC28	1.61	900 FC28	1.57
		1200	1120 FC28	0.98	780 FC28	1.70	840 FC28	1.68
	450	900	1270	0.84	980	1.61	1060	1.60
		1050	1190 FC28	0.91	900 FC28	1.73	980 FC28	1.72
		1200	1120 FC28	0.98	800 FC28	1.75	870 FC28	1.74
3 layers of 16mm	600	750	1270	0.81	920	1.46	990	1.44
		900	1190 FC28	0.91	840 FC28	1.60	910 FC28	1.58
		1050	1110 FC28	0.99	770 FC28	1.71	840 FC28	1.70
	450	750	1270	0.81	990	1.58	1070	1.56
		900	1190	0.91	910	1.74	980	1.71
		1050	1110 FC28	0.99	790 FC28	1.76	860 FC28	1.75

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

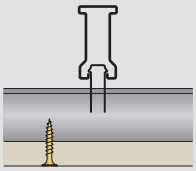
Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions.*
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 18 38mm Top Cross Rail Ceiling Span Table - REGION B

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

38mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.71
			Serviceability pressure W_S (kPa)	0.3

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1320	0.79	950	1.41	1030	1.40
		1050	1240 FC28	0.86	880 FC28	1.52	950 FC28	1.51
		1200	1170 FC28	0.93	820 FC28	1.62	890 FC28	1.61
	450	900	1320	0.79	1030	1.54	1110	1.51
		1050	1240	0.86	950	1.65	1030	1.64
		1200	1170 FC28	0.93	880 FC28	1.75	960 FC28	1.74
2 layers of 10mm	600	900	1260	0.84	900	1.49	970	1.47
		1050	1180 FC28	0.91	830 FC28	1.60	900 FC28	1.59
		1200	1120 FC28	0.99	780 FC28	1.72	840 FC28	1.69
	450	900	1260	0.84	970	1.61	1050	1.60
		1050	1180	0.91	900	1.74	970	1.72
		1200	1120 FC28	0.99	790 FC28	1.75	870 FC28	1.76
1 layer of 13mm	600	900	1290	0.81	930	1.46	1000	1.43
		1050	1210 FC28	0.88	860 FC28	1.57	930 FC28	1.55
		1200	1140 FC28	0.95	800 FC28	1.67	860 FC28	1.64
	450	900	1290	0.81	1000	1.57	1080	1.55
		1050	1210	0.89	930	1.70	1000	1.67
		1200	1140 FC28	0.95	840 FC28	1.76	920 FC28	1.76
2 layers of 13mm	600	750	1310	0.79	940	1.42	1020	1.41
		900	1220	0.89	860	1.56	930	1.54
		1050	1140 FC28	0.96	790 FC28	1.67	860 FC28	1.66
	450	750	1310	0.80	1020	1.55	1100	1.53
		900	1210	0.88	930	1.69	1000	1.66
		1050	1140 FC28	0.97	820 FC28	1.74	900 FC28	1.75
3 layers of 13mm	600	750	1240	0.85	880	1.52	950	1.50
		900	1150 FC28	0.95	800 FC28	1.65	870 FC28	1.64
		1050	1070 FC28	1.03	730 FC28	1.76	790 FC28	1.74
	450	750	1240	0.86	950	1.64	1030	1.63
		900	1150	0.95	850	1.76	930	1.76
		1050	1070 FC28	1.03	720 FC28	1.74	790 FC28	1.74
1 layer of 16mm	600	900	1290	0.82	920	1.45	1000	1.45
		1050	1210 FC28	0.89	850 FC28	1.57	920 FC28	1.55
		1200	1140 FC28	0.96	800 FC28	1.68	860 FC28	1.65
	450	900	1290	0.82	1000	1.59	1080	1.57
		1050	1210	0.89	920	1.70	1000	1.69
		1200	1140 FC28	0.96	830 FC28	1.75	910 FC28	1.75
2 layers of 16mm	600	750	1300	0.80	940	1.45	1010	1.42
		900	1210	0.89	850	1.57	920	1.55
		1050	1130 FC28	0.97	790 FC28	1.70	850 FC28	1.67
	450	750	1300	0.80	1010	1.56	1090	1.54
		900	1210	0.89	920	1.70	1000	1.69
		1050	1130 FC28	0.97	810 FC28	1.74	890 FC28	1.75
3 layers of 16mm	600	750	1230	0.87	870	1.53	940	1.51
		900	1140 FC28	0.96	800 FC28	1.69	860 FC28	1.66
		1050	1060 FC28	1.04	710 FC28	1.74	780 FC28	1.75
	450	750	1230	0.87	940	1.66	1020	1.64
		900	1140	0.96	830	1.75	910	1.76
		1050	1060 FC28	1.04	710 FC28	1.75	780 FC28	1.76

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

Concrete Soffit Anchor Table

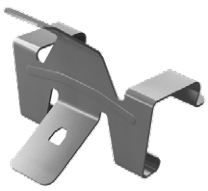
Concrete Grade	C1 Anchor
20 - 25 MPa	SA6x60
≥32MPa	SA6x45

Concrete Grade	C2 Anchor
≥ 20 MPa	SXTB08055

1. No edge / spacing effects.

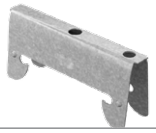
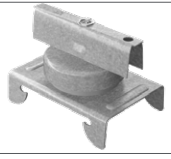
1. Table refers to Siniat furring channels of 0.42mm Base Metal Thickness (BMT) of grade G550 steel and Siniat top cross rails of 0.75mm BMT of grade G300, both with Zincalume™ AM150 corrosion protection. Maximum production lengths available are 6.0m
2. Table based upon downward (suction) and upward (uplift) ultimate (Wu) wind pressure and serviceability (Ws) deflection limits stated, intended for internal use only. Down-struts are required for uplift.
3. Clip capacities must be checked with the *Ceiling Clip Capacity - Suspended Ceiling Frames* Table.
4. Perimeter anchors at 600mm maximum centres and 100mm maximum from track ends with minimum 0.7 kN shear capacity.
5. 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.
6. Contact Siniat or a structural engineer to check ceiling for earthquake actions. Specific project information is required.
7. Furring Channels checked for 2-or-more spans only. If required, contact Siniat for Single Span furring channel check.
8. Designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures* and *AS/NZS 2785:2020 Suspended Ceilings - Design and Installation.*
9. Wind pressures determined in accordance with *AS/NZS 1170.2 Wind Actions*.
10. Ultimate Limit State Load Case 1: 1.2G + Wu (Suction) + $Q_{0.03kPa\ Service\ Load}$. Ultimate Limit State Load Case 2: 0.9G + Wu (Uplift).
11. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360. For gloss or brittle ceiling finishes contact Siniat for Span/500 deflection limit. Serviceability Limit State Load Case 2: Ws, with deflection limited to Span/200.
12. The nominated lateral wind pressures and deflection limits must be checked for suitability for a specific project.
13. For BCA Building Importance Level 4, please contact Siniat.

Table 19 Ceiling Clip Capacity - Suspended Ceiling Frames

Image	Name	Code	ULS Design Capacity (kN)
	Spring Adjustable Purlin to Suspension Rod Clip	C60DF	1.80
	Spring Adjustable Anchor to Suspension Rod Clip	C60LDF (6.5mm diameter hole)	1.80
	Suspension Rod Flat Bracket	C74	1.06
	Suspension Rod Multi-purpose Bracket	C47-74 (6mm diameter hole)	1.06
		C47-749 (9mm diameter hole)	
	Spring Adjustable Suspension Rod to Top Cross Rail Clip	C60	1.80
	Anchor to Top Cross Rail Clip	C24	1.80
	Top Cross Rail to Purlin Clip	C66	1.80
	Spring Adjustable Side Mounted Top Cross Rail Clip	C61S	1.31

1. Clip capacities are applicable to Siniat products only.
2. Clip capacities determined in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*, Section 8.2.
3. Suitable for internal use only.

Table 19 continued Ceiling Clip Capacity - Suspended Ceiling Frames

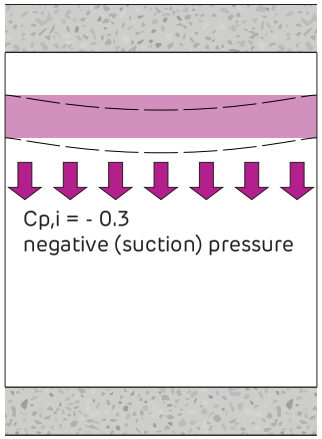
Image	Name	Code	ULS Design Capacity (kN)
	Spring Adjustable Suspension Rod Joiner	C54	1.80
	Adjustable Top Cross Rail Clip, with 6.5mm hole suitable for screws 3 sizes available: 100mm drop, 200mm drop, 300mm drop	CTCR-100 CTCR-200 CTCR-300	1.70
	Adjustable Top Cross Rail Clip, with M6 thread 100mm drop	CTCR/M6-100	1.70
	Adjustable Top Cross Rail Resilient Clip, with 6.5mm hole suitable for screws 3 sizes available: 100mm drop, 200mm drop, 300mm drop	CTCRRES-100 CTCRRES-200 CTCRRES-300	1.70
	Adjustable Top Cross Rail Resilient Clip, with M6 thread 3 sizes available: 100mm drop, 200mm drop, 300mm drop	CTCRRESM6-100 CTCRRESM6-200 CTCRRESM6-300	1.70
	Top Cross Rail to Furring Channel Locking Key (clik clak) (standard and wide versions)	C39 CW39 (wide)	1.26
	Top Cross Rail to Furring Channel Swivel Clip	C79S	1.32
	Top Cross Rail to Furring Channel Resilient Swivel Clip	C79SRES	1.32
	Clip Isolation Hanger	CRAIH-05	1.06

1. Clip capacities are applicable to Siniat products only.
2. Clip capacities determined in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*, Section 8.2.
3. Suitable for internal use only.

Worked Example

Internal suspended ceiling lined with plasterboard

- Internal suspended top cross rail and furring channel ceiling - lined 2 x 16mm fire rated plasterboard
- Large ceiling area with 3-or-more spans for both the top cross rail and the furring channel
- Deflection limit of G less than span/360 and G+Ws less than span/200 is suitable
- Shopping centre that is effectively sealed where the external walls have non-opening windows
- Building location is Brisbane
- Building Importance Level is 2
- Terrain Category is 2.5
- Floor of the internal suspended ceiling to be built is located 10m from ground level.



Case 2: Internal Ceiling $C_{p,i}$ = - 0.3 (suction)

1. Air-conditioned Hospitals, Offices and Shopping Centres (except loading docks) that are effectively sealed where the external walls have non-opening windows
2. Internal ceiling
3. Ceiling with an impermeable roof/floor.

Step 1 *Determine $C_{p,i\ net}$*
From Section 2.3, first find the appropriate $C_{p,i}$. From the information above, the internal suspended ceiling is the same as Case 2, therefore the appropriate $C_{p,i}$ is 0.3.

Step 2 *Determine the Wind Region*
From Figure 2 'Australian Wind Regions' in Section 2.3, find Brisbane located in Wind Region B1.

Step 3 *Determine the building's Importance Level (IL)* Usually found on the front page of the Structural Engineers notes for the project. In this case the IL is 2.

Step 4 *Determine the Terrain Category (TC)* of the surrounding landscape around the building. Also usually found on the front page of the Structural Engineers notes for the project. In this case the TC is 2.5.

Step 5 *Determine Ultimate (W_U) and Serviceability (W_S) Wind Pressures.*
The floor of the building where the ceiling is to be built is 10m above the ground level. Refer to Table 9 in Section 2.3 'Internal Wind Pressures $C_{p,i}$ = 0.3'.

The pressures found are Wu = 0.49 kPa, and Ws = 0.23 kPa.

Step 6 *Determine ceiling frame.*
Use the relevant '38mm Top Cross Rail Suspended Ceiling Span Table - Region B' in Section 5.1. For this case the internal wind pressures are rounded up to the nearest tables nominated pressure which are W_U = 0.59 kPa and W_S = 0.25 kPa.

Answer

A solution can be found using:

- 28mm Furring Channel (FC28) at 600mm centres
- 38mm Top Cross Rail (TCR38) spaced at 1200mm centres
- Hangers along the TCR38 at 840mm maximum intervals.
- Clip and anchor demand is 1.68 kN which can be checked using Tables 19 'Ceiling Clip Capacity' and from Section 2.1 Table 20 'Static and Quasi-static Performance in Concrete'.

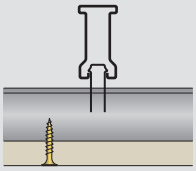
Table 19 Internal Wind Pressures $C_{p,i}$ =0.3

Building Importance Level 2																								
Region	A												B1 and B2											
Ultimate Wind Speed V500 (m/s)	45												57											
Serviceability Wind Speed V25 (m/s)	37												39											
Terrain Category	1			2			2.5			3			1			2			2.5			3		
Height above ground (z)	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50	10	25	50
$M_{z,cat}$	1.08	1.16	1.23	1.00	1.10	1.18	0.92	1.04	1.13	0.83	0.97	1.07	1.08	1.16	1.23	1.00	1.10	1.18	0.92	1.04	1.13	0.83	0.97	1.07
Ultimate Wind Pressure (kPa)	0.43	0.49	0.55	0.36	0.44	0.51	0.31	0.39	0.47	0.25	0.34	0.42	0.68	0.79	0.88	0.58	0.71	0.81	**0.49**	0.63	0.75	0.40	0.55	0.67
Serviceability Wind Pressure (kPa)	0.29	0.33	0.37	0.25	0.30	0.34	0.21	0.27	0.31	0.17	0.23	0.28	0.32	0.37	0.41	0.27	0.33	0.38	**0.23**	0.30	0.35	0.19	0.26	0.31

Worked Example continued

Table 20 38mm Top Cross Rail Ceiling Span Table - REGION B

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

38mm Top Cross Rail Ceiling Span Table		Up to BCA Building Importance Level 3	Ultimate pressure W_U (kPa)	0.59
			Serviceability pressure W_S (kPa)	0.25

Ceiling Lining	Furring Channel Spacing (mm)	Top Cross Rail Spacing (mm)	Single Span		Double Span		3-or-more Spans	
			Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)	Hanger Spacing (mm)	Hanger Demand (kN)
1 layer of 10mm	600	900	1410	0.72	1030	1.32	1110	1.30
		1050	1320	0.79	950	1.42	1030	1.41
		1200	1250 FC28	0.85	890 FC28	1.52	960 FC28	1.50
	450	1050	1320	0.79	1020	1.53	1110	1.52
		1200	1250 FC28	0.86	960 FC28	1.65	1030 FC28	1.61
		1350	1180 FC28	0.91	900 FC28	1.73	980 FC28	1.73
2 layers of 10mm	600	900	1340	0.78	960	1.40	1040	1.38
		1050	1250 FC28	0.85	890 FC28	1.51	960 FC28	1.49
		1200	1180 FC28	0.91	830 FC28	1.61	900 FC28	1.59
	450	900	1330	0.78	1040	1.52	1120	1.49
		1050	1250	0.85	960	1.63	1040	1.62
		1200	1180 FC28	0.92	900 FC28	1.75	970 FC28	1.72
1 layer of 13mm	600	900	1370	0.75	1000	1.36	1080	1.35
		1050	1290 FC28	0.82	920 FC28	1.46	990 FC28	1.44
		1200	1220 FC28	0.89	860 FC28	1.56	930 FC28	1.54
	450	900	1370	0.75	1070	1.46	1160	1.45
		1050	1290	0.82	990	1.58	1070	1.56
		1200	1210 FC28	0.88	930 FC28	1.69	1000 FC28	1.66
2 layers of 13mm	600	900	1280	0.83	910	1.47	990	1.46
		1050	1200 FC28	0.90	840 FC28	1.58	910 FC28	1.56
		1200	1130 FC28	0.97	790 FC28	1.70	850 FC28	1.67
	450	900	1280	0.83	990	1.60	1070	1.58
		1050	1200 FC28	0.90	910 FC28	1.71	990 FC28	1.71
		1200	1130 FC28	0.97	810 FC28	1.74	890 FC28	1.75
3 layers of 13mm	600	750	1290	0.80	930	1.45	1010	1.44
		900	1200 FC28	0.89	850 FC28	1.58	920 FC28	1.57
		1050	1120 FC28	0.97	780 FC28	1.69	850 FC28	1.69
	450	750	1290	0.80	1000	1.56	1090	1.55
		900	1200	0.90	920	1.72	990	1.69
		1050	1120 FC28	0.97	800 FC28	1.74	880 FC28	1.75
1 layer of 16mm	600	900	1370	0.76	990	1.36	1070	1.35
		1050	1280 FC28	0.82	920 FC28	1.48	990 FC28	1.45
		1200	1210 FC28	0.89	860 FC28	1.58	920 FC28	1.54
	450	900	1360	0.75	1070	1.48	1150	1.45
		1050	1280	0.82	990	1.59	1070	1.58
		1200	1210 FC28	0.89	920 FC28	1.69	1000 FC28	1.68
2 layers of 16mm	**600**	900	1270	0.83	910	1.49	980	1.47
		1050	1190 FC28	0.91	840 FC28	1.61	900 FC28	1.57
		1200	1120 FC28	0.98	780 FC28	1.70	**840 FC28**	**1.68**
	450	900	1270	0.84	980	1.61	1060	1.60
		1050	1190 FC28	0.91	900 FC28	1.73	980 FC28	1.72
		1200	1120 FC28	0.98	800 FC28	1.75	870 FC28	1.74
3 layers of 16mm	600	750	1270	0.81	920	1.46	990	1.44
		900	1190 FC28	0.91	840 FC28	1.60	910 FC28	1.58
		1050	1110 FC28	0.99	770 FC28	1.71	840 FC28	1.70
	450	750	1270	0.81	990	1.58	1070	1.56
		900	1190	0.91	910	1.74	980	1.71
		1050	1110 FC28	0.99	790 FC28	1.76	860 FC28	1.75

'FC28' indicates only 28mm Furring Channel is suitable. When 'FC28' is not present in the table both 18mm and 28mm Furring Channels are suitable.

External Ceilings

External ceilings include alfresco areas, carports, balconies, breezeways and foyers with plasterboard installed horizontally or sloping away from the main dwelling. External ceilings are subjected to harsher conditions than internal ceilings, and therefore they need additional protection from the weather. This extra protection is designed to control the major causes of external ceiling faults which are:

- Condensation on the plasterboard, ceiling framing, roof framing or roof lining and dripping down onto the ceiling
- Water penetrating the paint system
- Distortion of plasterboard joints
- Plasterboard swelling and sagging
- Mould growth
- Fastener popping
- Corrosion of ceiling framing.

Minimum Conditions to Use Plasterboard and Steel Ceiling Framing in External Ceilings

- The plasterboard and associated substrate must be designed for the appropriate loading conditions including wind loads. Down-struts must also be included to prevent uplift.
- The plasterboard and steel framing must be suitable for the application [Refer to 'Plasterboard' and 'Steel Framing' in Section 2.1]
- The cavity above the plasterboard ceiling must comply with the requirements of NCC Volume One, Part F8 or NCC Volume Two, Part 10.8. Please note, continuous air-flow in and out of a ceiling cavity near salt water may decrease the durability of steel framing.
- Condensation on the back and front of the plasterboard lining and any steel framing must be controlled. Use condensation prevention measures such as, adequate roof cavity ventilation and thermal insulation. In particular, foil backed insulation must be used under a metal roof.
- Anchors and fasteners used must be minimum Class 3 or higher depending on the application, or protected from corrosion by other means. Note that stainless steel fasteners are not permitted with galvanised or Zincalume protected steels.
- The plasterboard, compounds and steel framing must not be subjected to any direct water, long periods of high humidity, sea spray or damp conditions.
- The plasterboard and compounds must be installed after the roof covering has been completely installed and sealed.
- Minimum 100mm clearance from external ceiling lining to lower edge of verandah beam or masonry lintel, otherwise provide protection against wind blown rain.
- Periodic inspections of any steel ceiling framing must be conducted to identify any areas of corrosion or damage which must be immediately rectified.

Installation Requirements for External Ceilings

- Use either 10mm **span**shield, 13mm **masta**shield, 10mm **opal**, 10mm or 13mm **water**shield, 10mm or 13mm **sound**shield, 13mm or 16mm **fire**shield, **multi**shield or **tru**rock.
- Ceiling framing at maximum 450mm framing centres.
- Provide additional framing around the perimeter by inserting trimmers between ceiling frames or installing steel angle, or installing additional ceiling battens.
- Fix the ceiling plasterboard using the 'Screw Only Method'. Nails are not permitted in this application.Additional screws may be required for high wind areas.
- Fix the perimeter of the plasterboard sheets using screws at 300mm maximum spacing.
- Install control joints at 6m maximum intervals.
- Back-block all plasterboard joints. [Refer to Section 7.2]
- Plaster set joints using two coats of **masta**base or **masta**longset and any Siniat finish coat.
- Roll or brush on a high quality sealer undercoat designed for exterior use.
- Use a premium exterior paint system that includes a mould inhibitor.

Please note that plasterboard must not be installed in eaves or as exterior cladding.

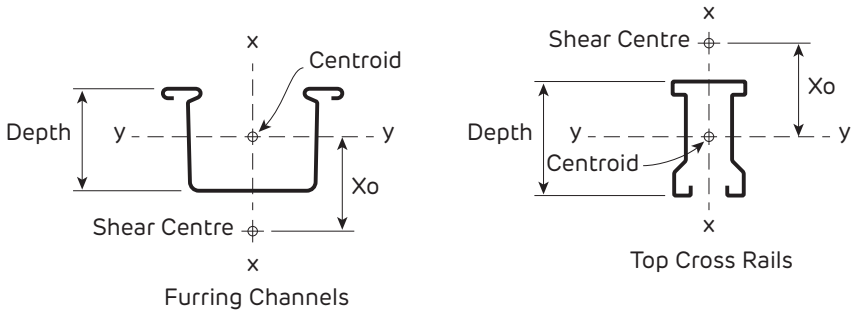
Thermal insulation is recommended directly above the plasterboard. This will minimise the temperature difference between the plasterboard and outside air, limiting ceiling sag and mould formation by reducing condensation on the plasterboard.

Steel Profile Information

Material

Manufacturer	Item	Grade	Ultimate	Yield	Coating
Siniat	Top Cross Rails	G300	340 MPa	300 MPa	AM150
	Furring Channels	G550	550 MPa	550 MPa	AM150

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



Section Properties

Profile	Dimensions (mm)		Shear Centre from Centroid (mm)	Area (mm^2)	Moment of Inertia (mm^4)		Section Modulus (mm^3)		Torsion Constant J (mm^4)	Warping Constant Iw (mm^6)
	Depth	BMT	Xo		Ixx	Iyy	Zxx	Zyy		
Furring Channels	18	0.42	-14.0	37.5	11,040	1,815	432	176	2.2	265,300
	28	0.42	-25.2	49.1	14,880	5,811	580	397	2.9	1,143,000
Top Cross Rails	25	0.75	-22.6	66.3	3,782	5,432	362	413	12.4	388,500
	38	0.75	-34.1	85.8	4,624	15,590	452	789	16.1	833,500

Plasterboard Layout

	Non-Fire Rated	Fire Rated
Sheet ceilings perpendicular to framing members.	✓	✓
Stagger face layer butt joints by at least one framing member on adjoining sheets.	✓	✓
Stagger butt joints by at least one framing member between layers.	✓	✓
Float face layer butt joints centrally between framing members for: > Three layer systems > Two layer systems on 600mm framing centres.		✓
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]	✓	

> 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
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, third and fourth layers.	✓	✓
Fastener 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.	✓	✓

The 'Fastener 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 ≤ 0.75mm BMT, use fine thread needle point screws.

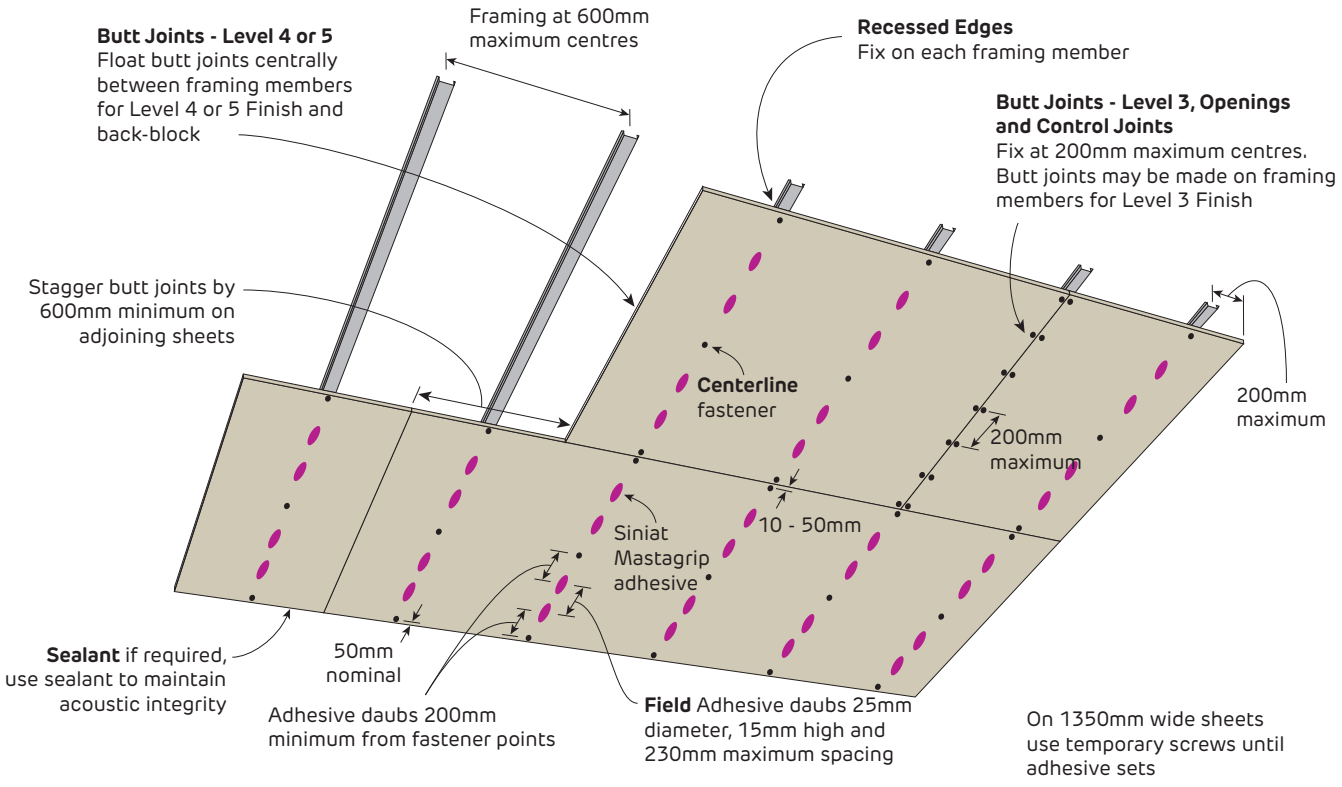
For steel ≥ 0.75mm BMT, use fine thread drill point screws.
*10g x 38mm Laminating screws may be used as detailed in installation diagrams.

Fastener Type and Minimum Size for the Installation of Plasterboard to Softwood Timber

Plasterboard Thickness	1st Layer	2nd Layer	3rd Layer	4th Layer
6.5mm	2.8 x 30mm galvanised nail or 2.8 x 25mm ring shank nail or 6g x 25mm screw	2.8 x 40mm galvanised nail or 2.8 x 30mm ring shank nail or 6g x 32mm screw	-	-
10mm	2.8 x 40mm galvanised nail or 2.8 x 30mm ring shank nail or 6g x 25mm screw for walls or 6g x 32mm screw for ceilings	2.8 x 50mm galvanised nail or 6g x 41mm screw *	-	-
13mm	2.8 x 40mm galvanised nail or 2.8 x 30mm ring shank nail or 6g x 41mm screw	2.8 x 50mm galvanised nail or 7g x 50mm screw *	3.75 x 75mm galvanised nail or 8g x 65mm screw *	-
16mm	2.8 x 50mm galvanised nail or 7g x 45mm screw	3.15 x 65mm galvanised nail or 8g x 60mm screw *	3.75 x 75mm galvanised nail or 8g x 75mm screw *	10g x 100mm fine thread screw *

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

FIGURE 11 Internal Ceiling Non-Fire Rated - 1 Layer
Fastener and Adhesive Method



Fixing Pattern Table

Sheet Width	Fixing Pattern
600mm	F F F F
900mm	F A F/F A F
1200mm	F A A F/F A A F
1350mm	F A A F/F A A F

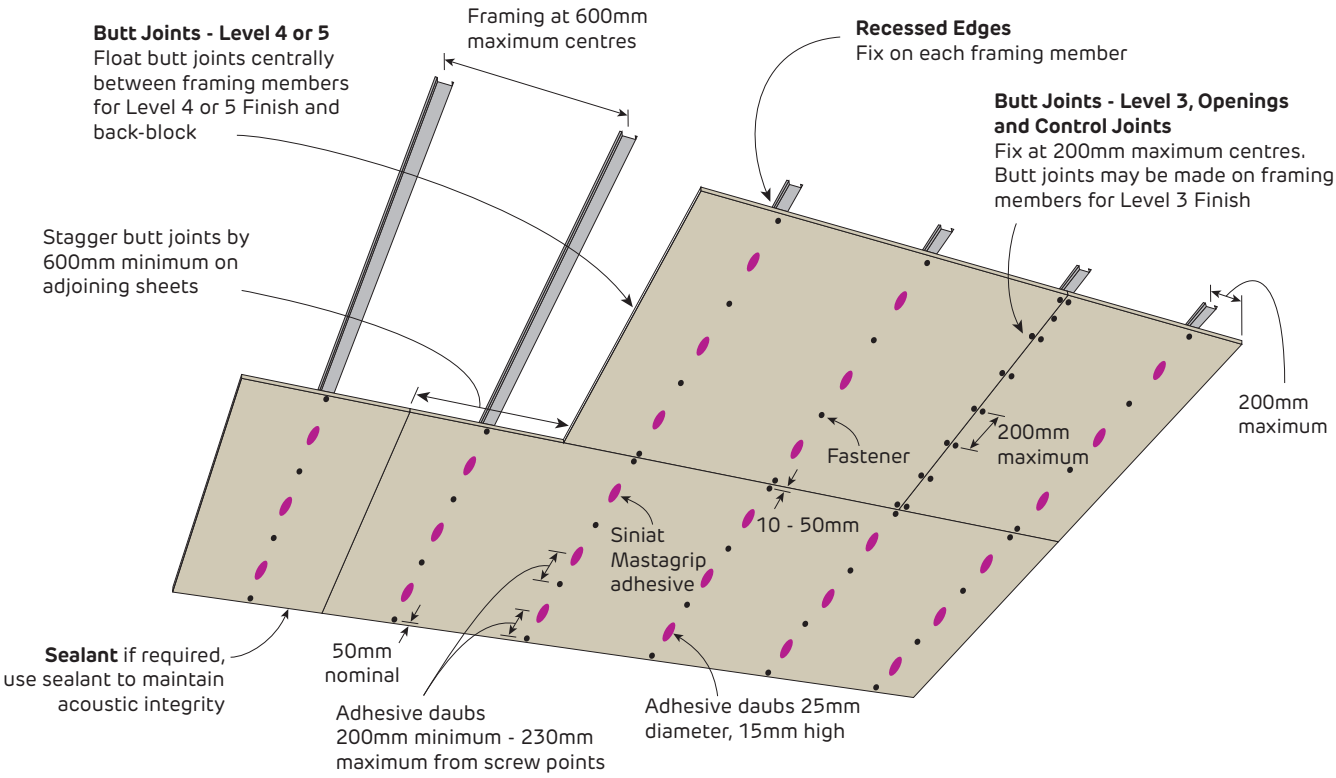
F = One screw or nail
F/F = One screw or double nails
A = One adhesive daub
Note: On 1350mm wide sheets use temporary fasteners until adhesive sets.

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
10mm	0.93	1.29	1.47	2.00
13mm	0.88	1.24	1.42	1.95
16mm	0.85	1.21	1.39	1.92

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 12 Internal Ceiling Non-Fire Rated - 1 Layer
1/3 Fastener and Adhesive Method



Fixing Pattern Table

Sheet Width	Fixing Pattern
600mm	F F F F
900mm	F A F A F
1200mm	F A F A F A F
1350mm	F A F A F A F

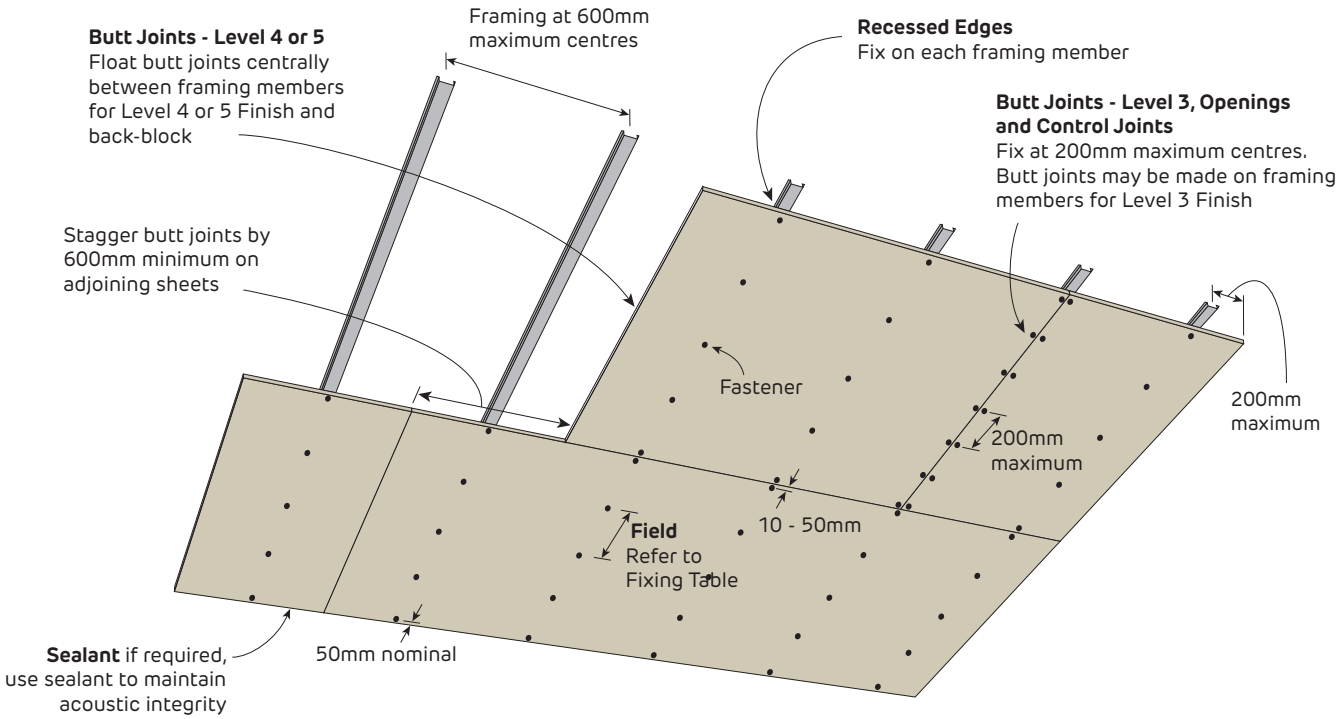
F = One nail or screw
A = One adhesive daub
Note: On 1350mm wide sheets use temporary fasteners until adhesive sets.

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
10mm	0.93	1.29	1.47	2.00
13mm	0.88	1.24	1.42	1.95
16mm	0.85	1.21	1.39	1.92

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 13 Internal Ceiling Non-Fire Rated - 1 Layer
Fastener Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S (3)
900mm	S S S S (4)
1200mm	S S S S S (5)
1350mm	S S S S S S (6)

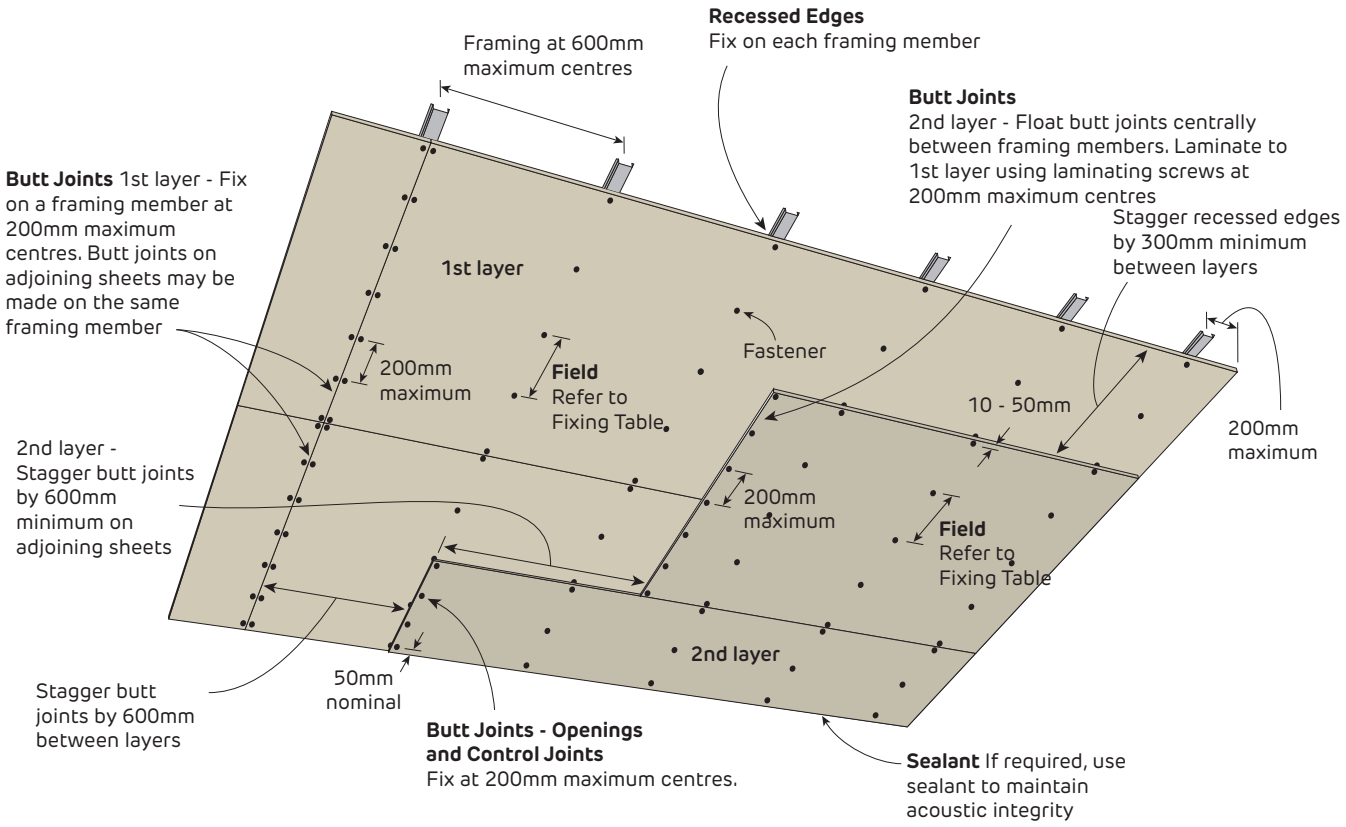
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
10mm	0.74	1.02	1.17	1.59
13mm	0.77	1.08	1.24	1.71
16mm	0.74	1.05	1.21	1.68

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 14 Internal Ceiling Non-Fire Rated - 2 Layers
Fastener Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S (3)
900mm	S S S S (4)
1200mm	S S S S S (5)
1350mm	S S S S S S (6)

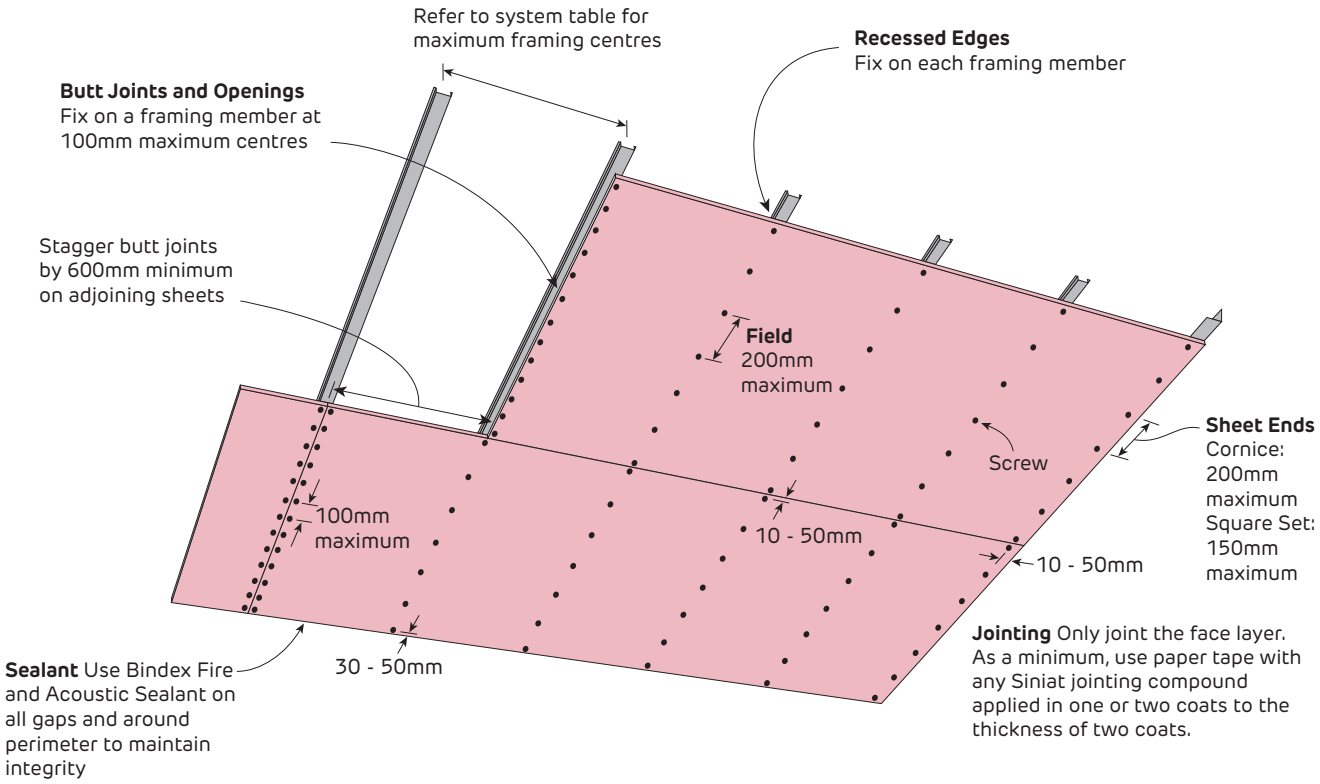
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
10mm	0.74	1.02	1.17	1.59
13mm	0.77	1.08	1.24	1.71
16mm	0.74	1.05	1.21	1.68

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 15 Internal Ceiling Fire Rated - 1 Layer
Screw Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S S (4)
900mm	S S S S S S (6)
1200mm	S S S S S S S (7)
1350mm	S S S S S S S S (8)

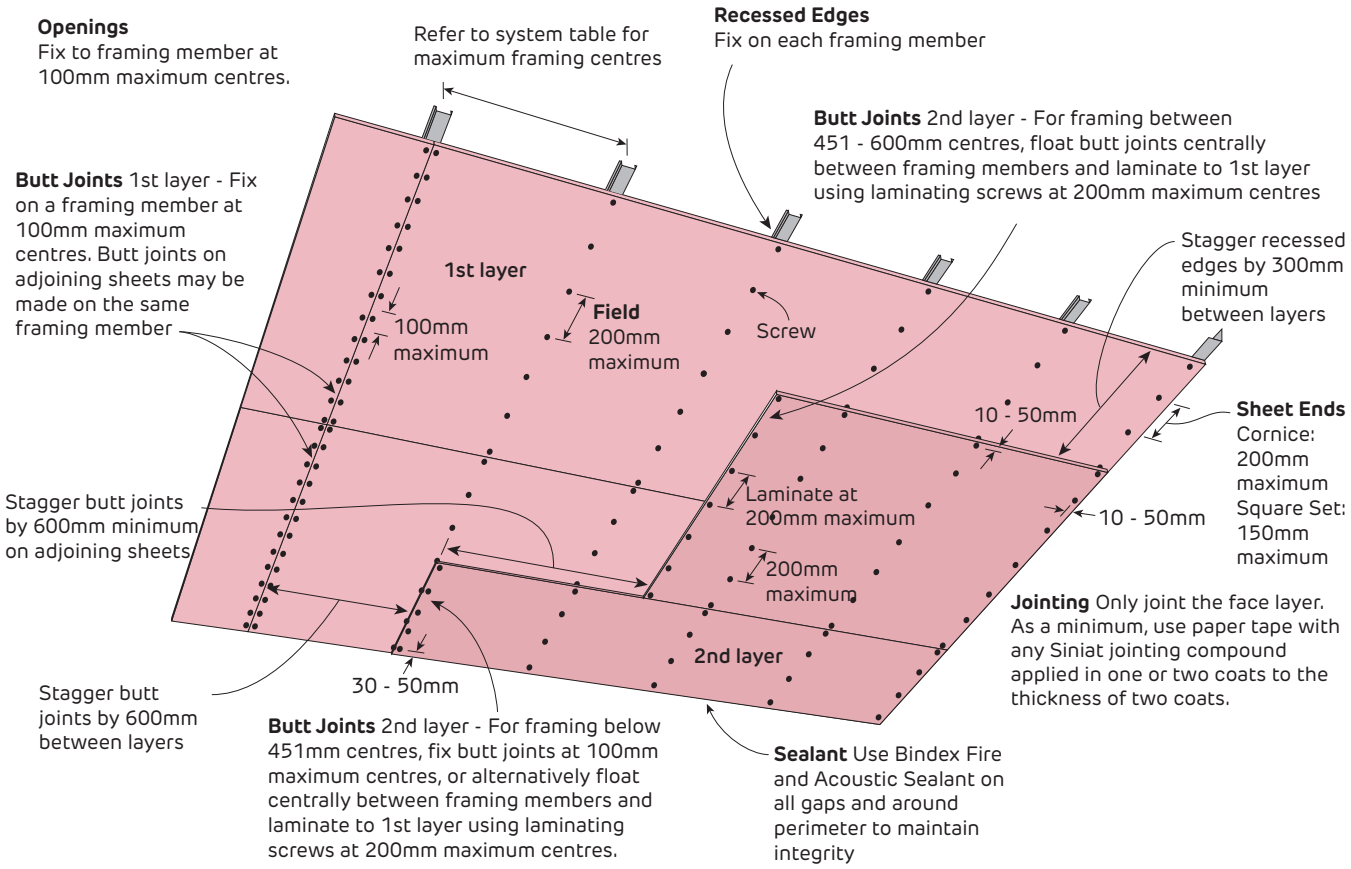
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
13mm	1.24	1.71	1.95	2.66
16mm	1.21	1.68	1.92	2.63

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 16 Internal Ceiling Fire Rated - 2 Layers
Screw Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S S (4)
900mm	S S S S S S (6)
1200mm	S S S S S S S (7)
1350mm	S S S S S S S S (8)

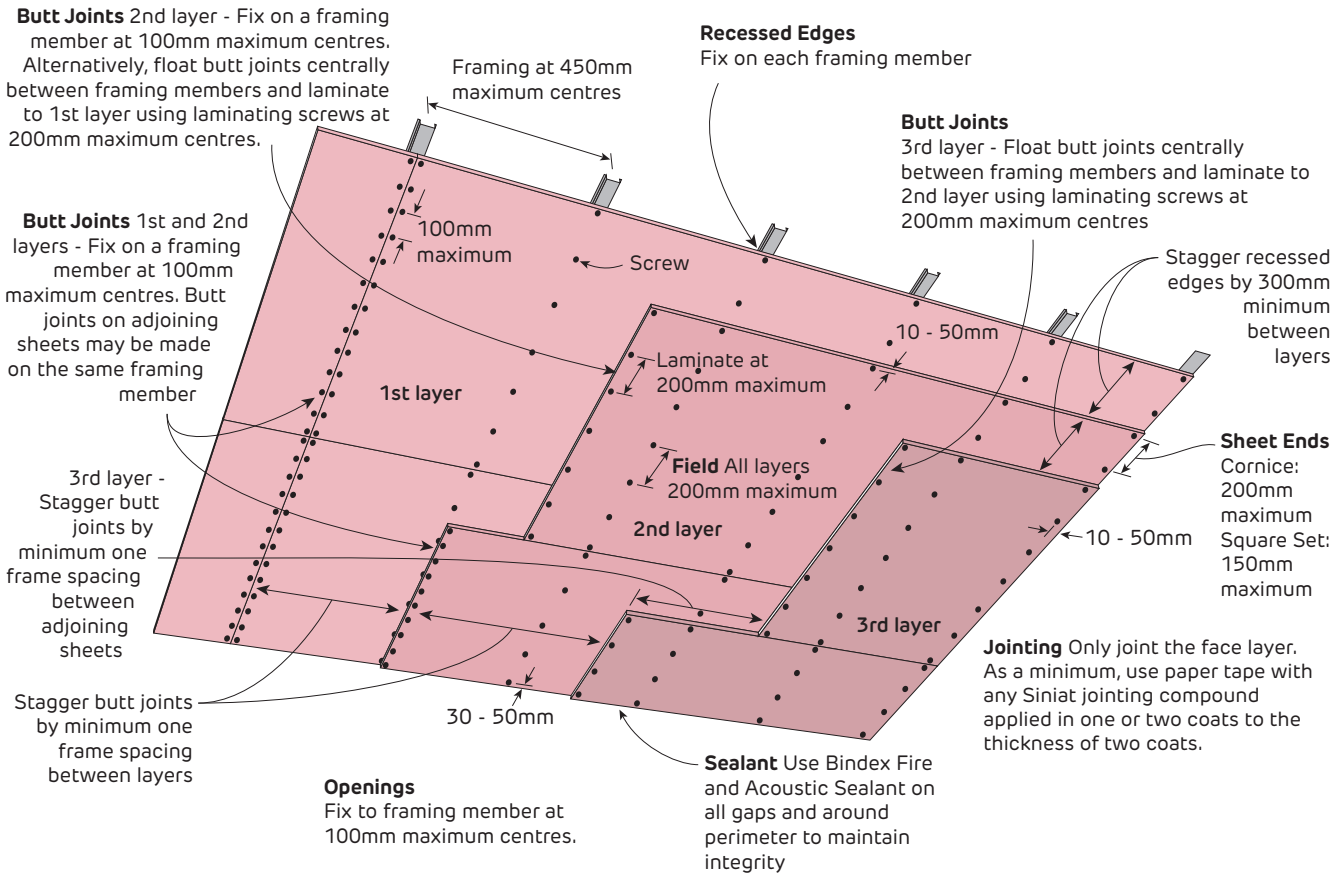
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
13mm	1.24	1.71	1.95	2.66
16mm	1.21	1.68	1.92	2.63

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 17 Internal Ceiling Fire Rated - 3 Layers
Screw Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S S (4)
900mm	S S S S S S (6)
1200mm	S S S S S S S (7)
1350mm	S S S S S S S S (8)

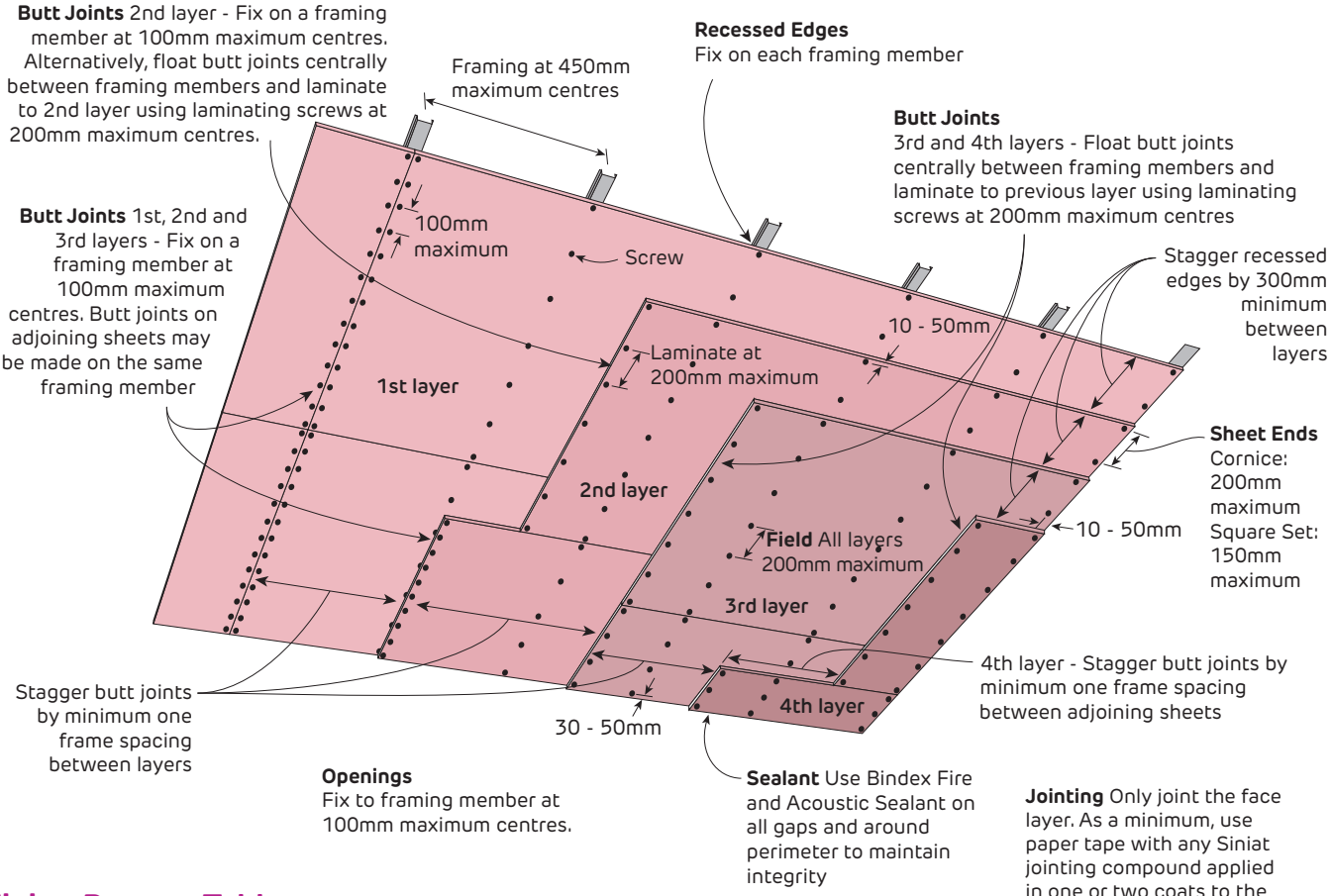
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
13mm	1.24	1.71	1.95	2.66
16mm	1.21	1.68	1.92	2.63

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 18 Internal Ceiling Fire Rated - 4 Layers
Screw Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S S (4)
900mm	S S S S S S (6)
1200mm	S S S S S S S (7)
1350mm	S S S S S S S S (8)

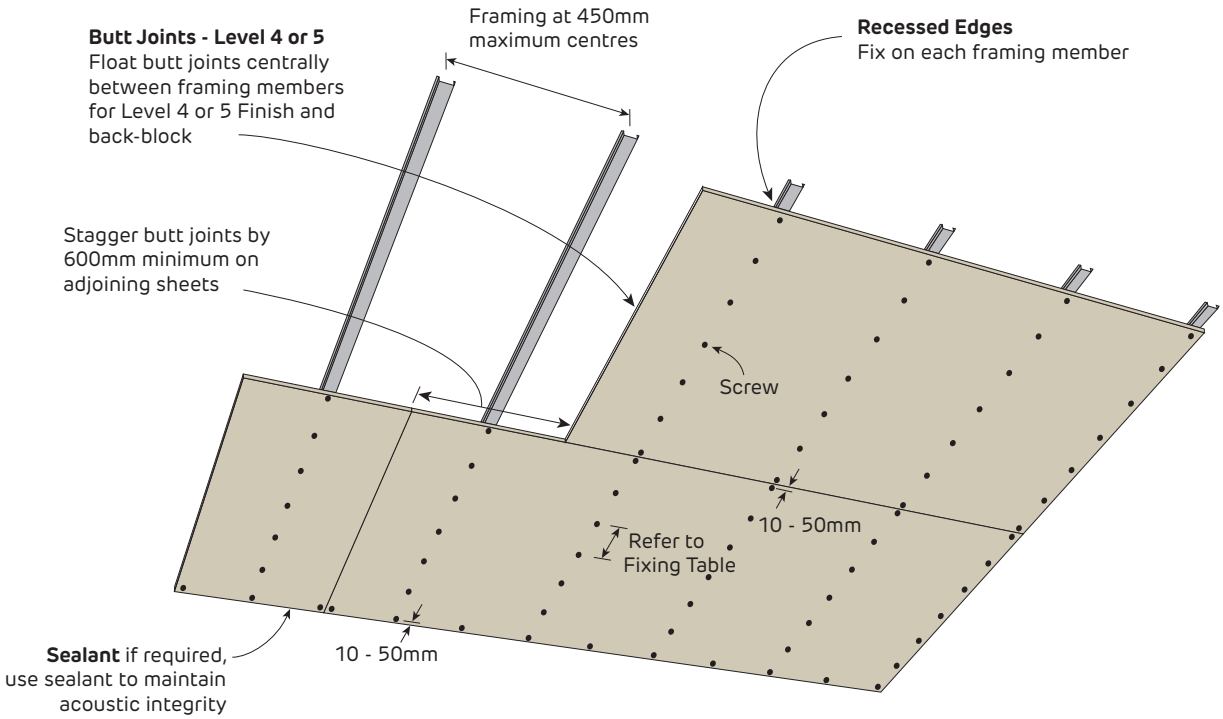
S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing			
	600mm	450mm	400mm	300mm
13mm	1.24	1.71	1.95	2.66
16mm	1.21	1.68	1.92	2.63

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

FIGURE 19 External Ceiling Non-Fire Rated - 1 Layer
Screw Only Method



Fixing Pattern Table

Sheet Width	Screw Fixing Pattern
600mm	S S S S (4)
900mm	S S S S S S (6)
1200mm	S S S S S S S (7)
1350mm	S S S S S S S S (8)

S = One screw

Maximum Ultimate Limit State Wind Load Table (kPa)

Plasterboard Thickness	Maximum Ceiling Frame Spacing		
	450mm	400mm	300mm
10mm	1.59	1.81	2.45
13mm	1.71	1.95	2.66
16mm	1.68	1.92	2.63

1. Calculations do not include the framing which must be independently designed to suit the desired load.
2. Calculations include a ceiling insulation with maximum weight of 2.5 kg/m2 (equivalent to R5.0 Pink® Batts Ceiling insulation).
3. Calcuated over 3-or-more spans.
4. If higher internal wind pressures are expected, please contact Siniat for specific design.

Fire Rated and Non-Fire Rated
Internal Ceilings - Direct Fix

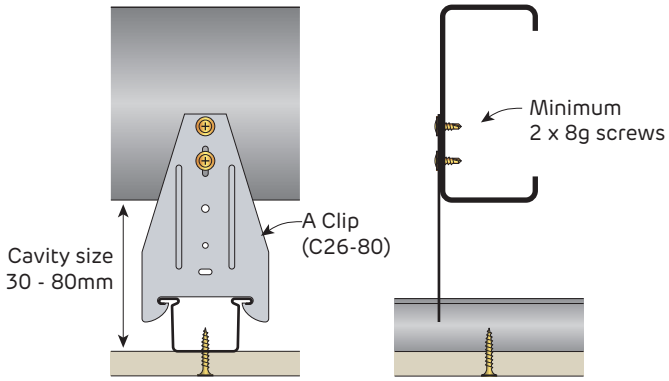


FIGURE 20 A Clip
Perspective and Sections

Direct fixing clips may generate noise when fixed to materials subject to daily thermal expansion and contraction

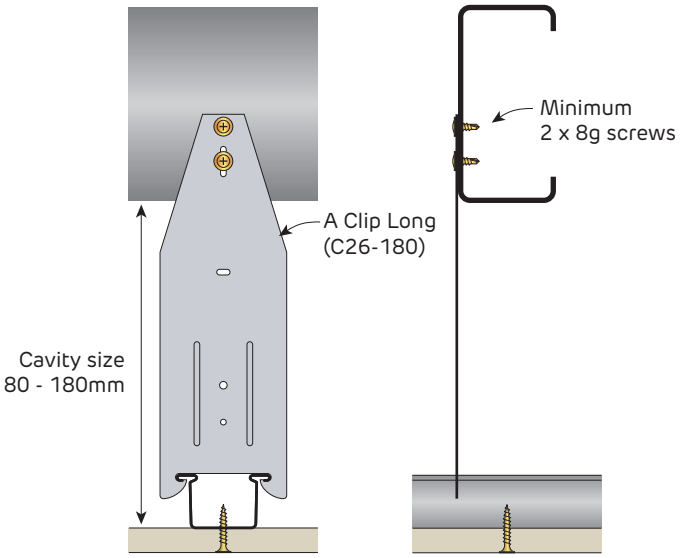
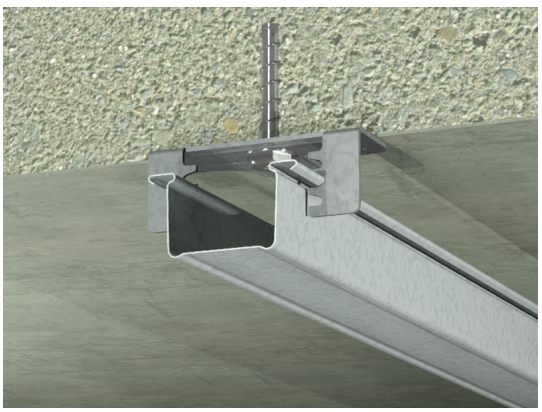


FIGURE 21 A Clip Long
Perspective and Sections



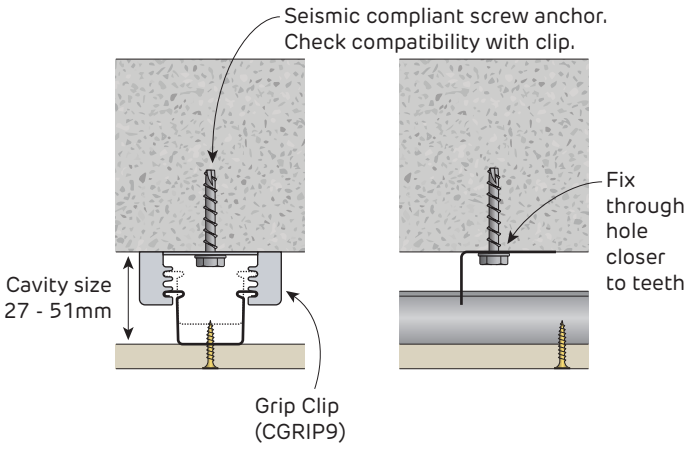
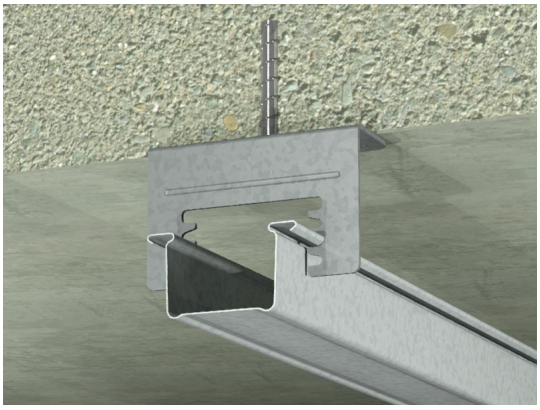


FIGURE 22 Grip Clip
With 9mm hole suitable for 6mm Screw Anchor
Perspective and Sections

Fire Rated and Non-Fire Rated
Internal Ceilings - Direct Fix



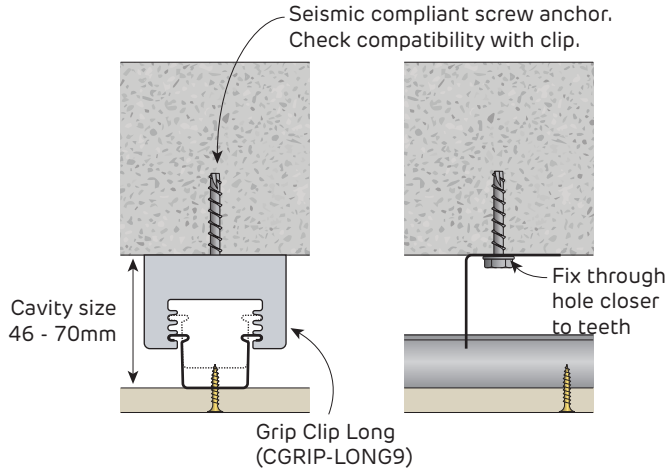
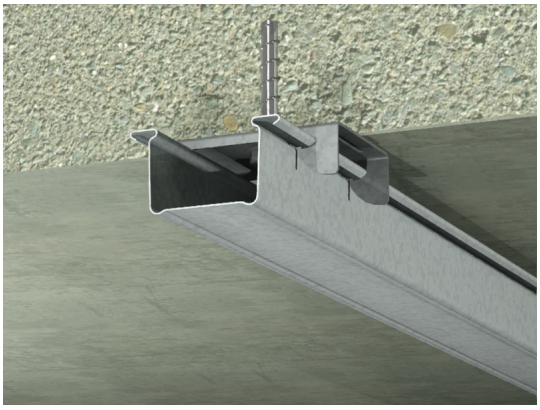


FIGURE 23 Grip Clip Long
With 9mm hole suitable for 6mm Screw Anchor
Perspective and Sections



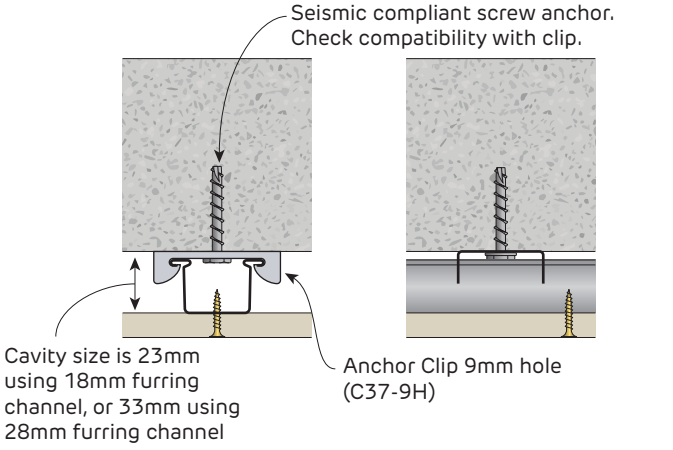


FIGURE 24 Anchor Clip
With 9mm hole suitable for 6mm Screw Anchor
Perspective and Sections

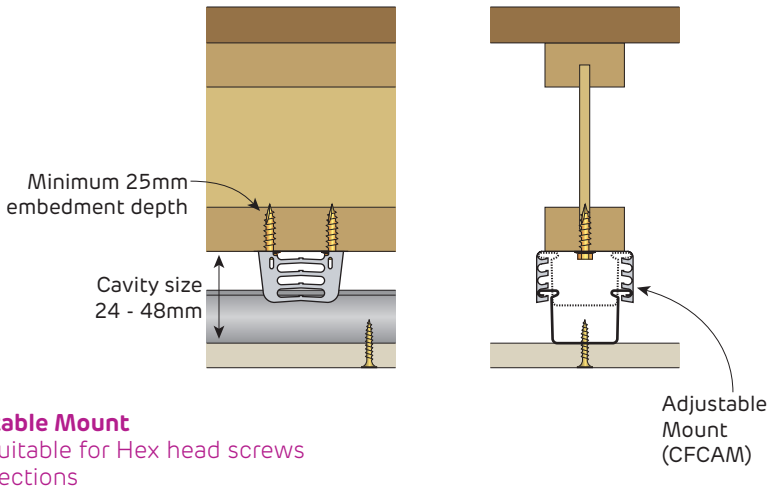


FIGURE 25 Adjustable Mount
With 7mm holes suitable for Hex head screws
Perspective and Sections

Fire Rated and Non-Fire Rated
Internal Ceilings - Acoustic Clips

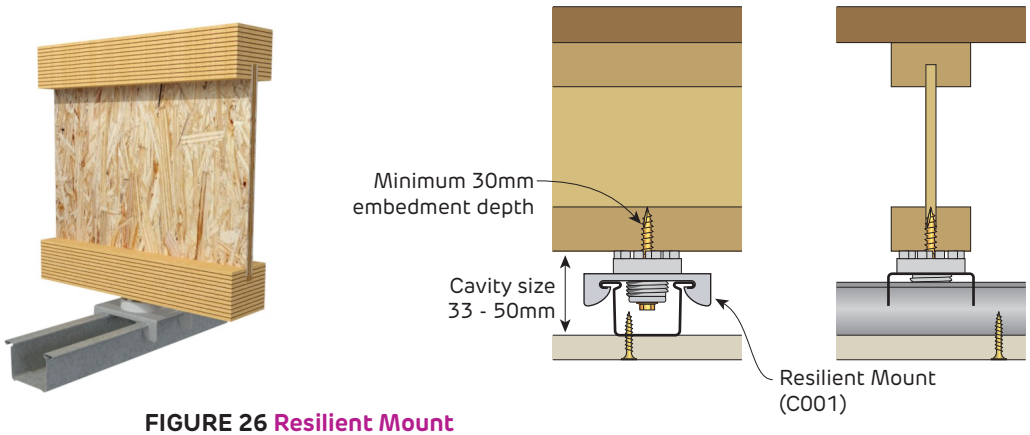
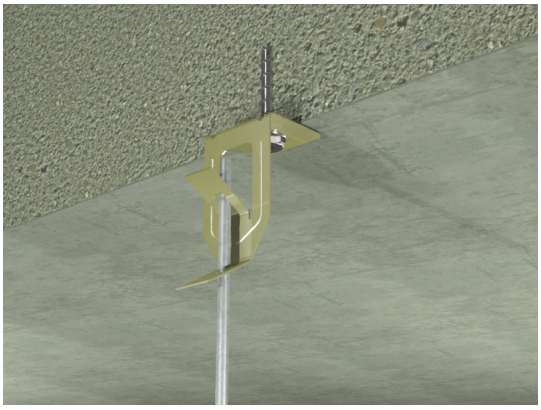


FIGURE 26 Resilient Mount
With 6.5mm hole suitable for Hex head screws
Perspective and Sections

Fire Rated and Non-Fire Rated
Suspension Rod Clips



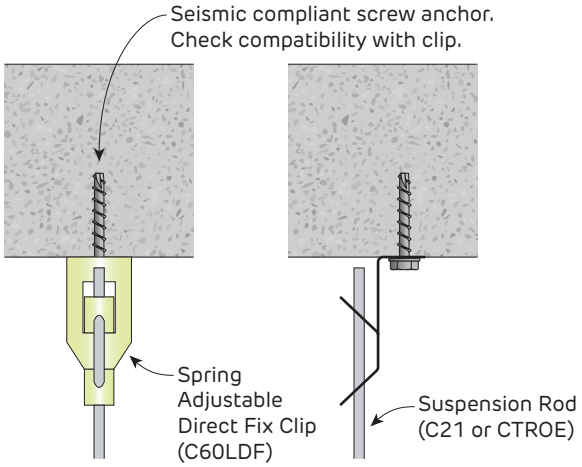


FIGURE 27 Spring Adjustable Direct Fix Clip to Concrete
Perspective and Sections

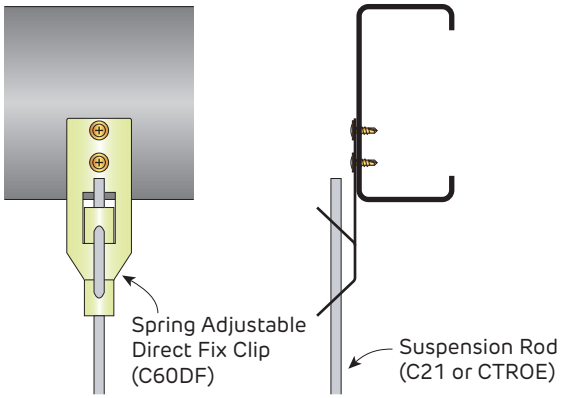
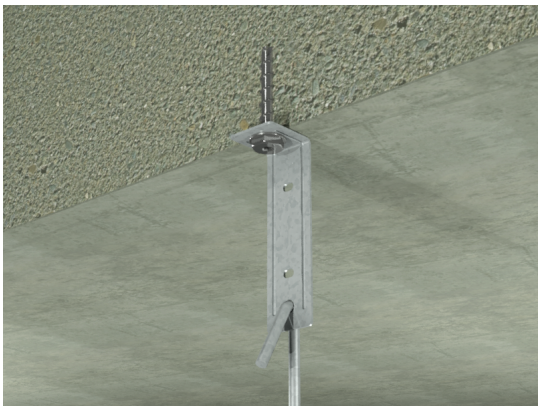


FIGURE 28 Spring Adjustable Direct Fix Clip to Purlin
Perspective and Sections



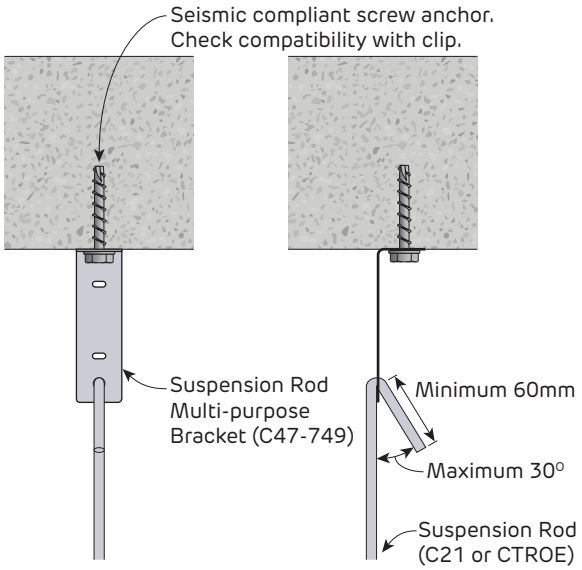


FIGURE 29 Suspension Rod Multi-purpose Bracket
Perspective and Sections

Fire Rated and Non-Fire Rated
Suspension Rod Clips

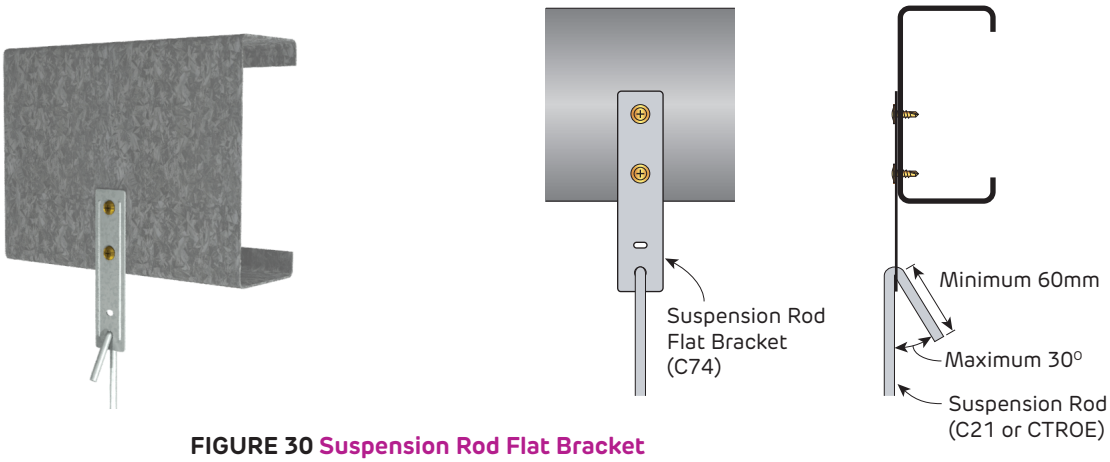


FIGURE 30 Suspension Rod Flat Bracket
Perspective and Sections

Fire Rated and Non-Fire Rated
Top Cross Rail Clips

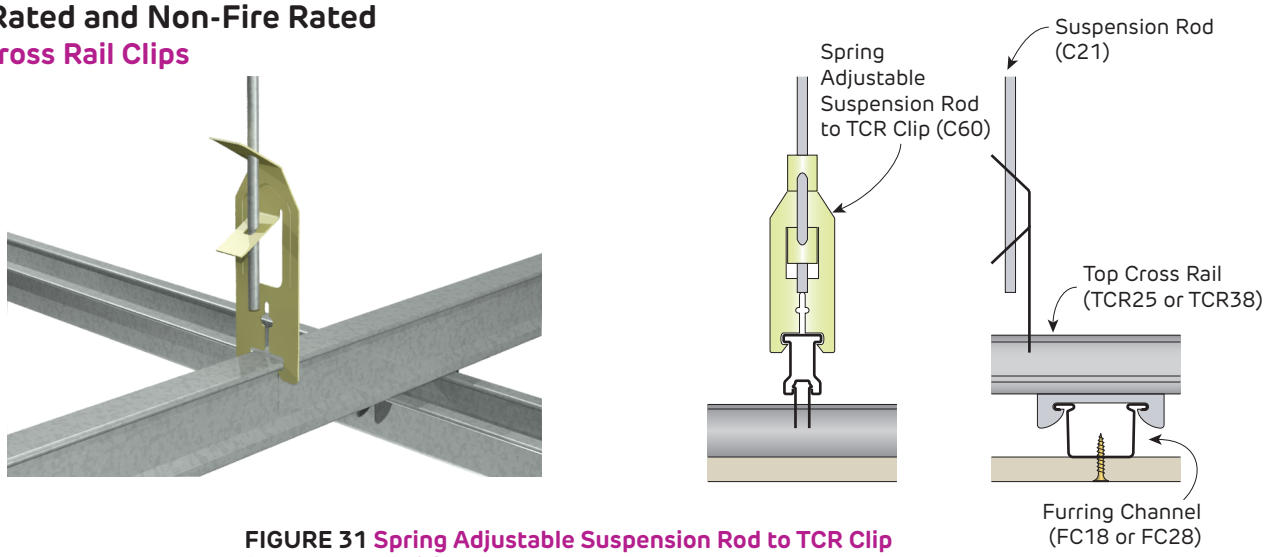


FIGURE 31 Spring Adjustable Suspension Rod to TCR Clip
Perspective and Sections

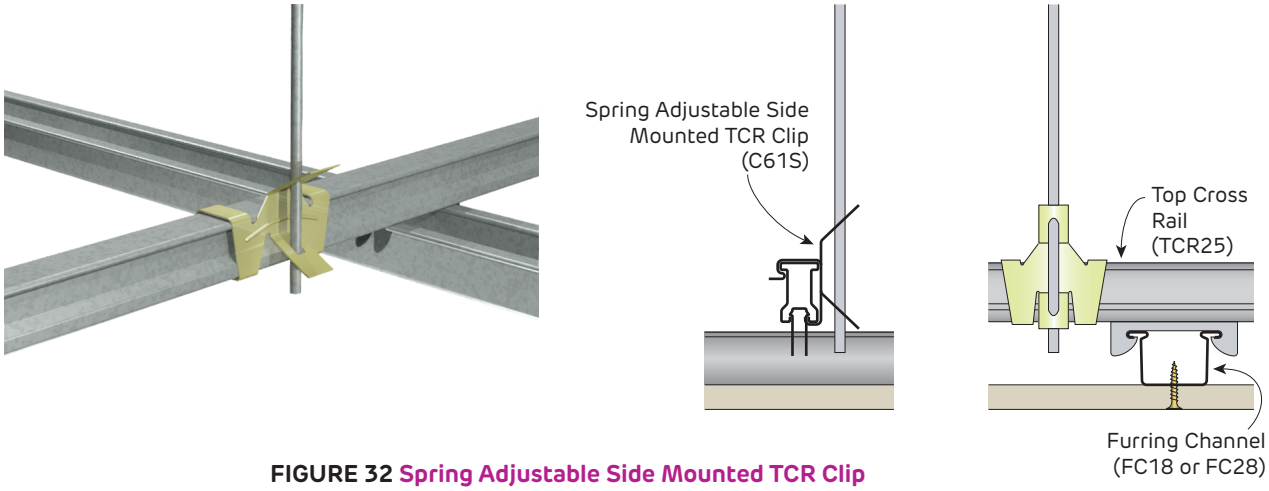


FIGURE 32 Spring Adjustable Side Mounted TCR Clip
Perspective and Sections

Fire Rated and Non-Fire Rated
Top Cross Rail Clips

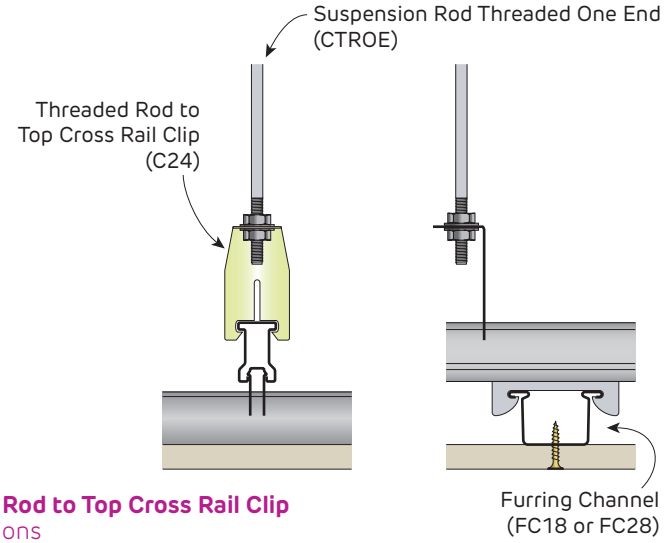
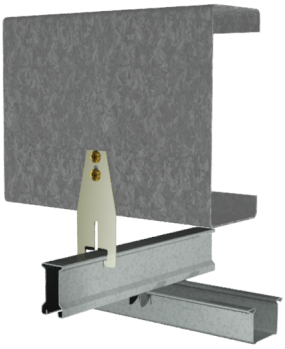


FIGURE 33 Threaded Rod to Top Cross Rail Clip
Perspective and Sections



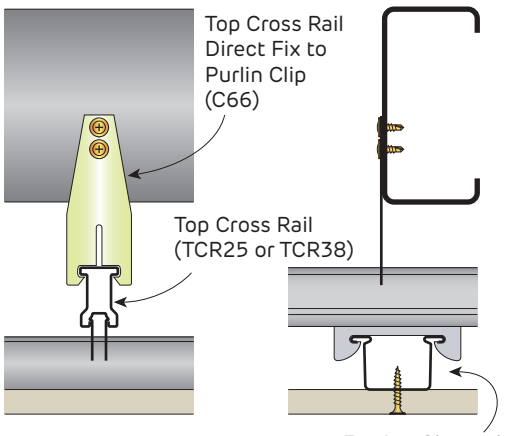


FIGURE 34 Top Cross Rail Direct Fix Clip to Purlin
Perspective and Sections

Fire Rated and Non-Fire Rated
Locking Key

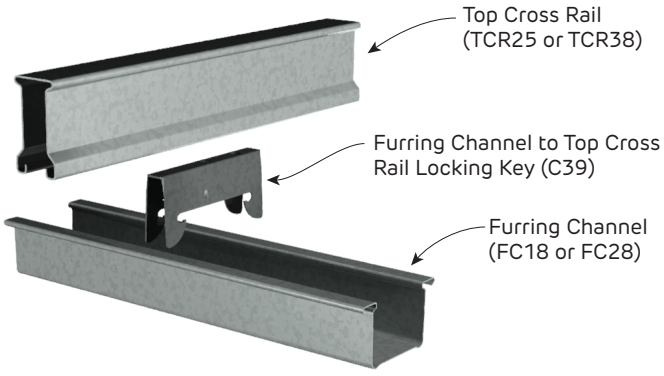


FIGURE 35 Locking Key
Perspective

Non-Fire Rated

Internal Ceilings - Direct Fix

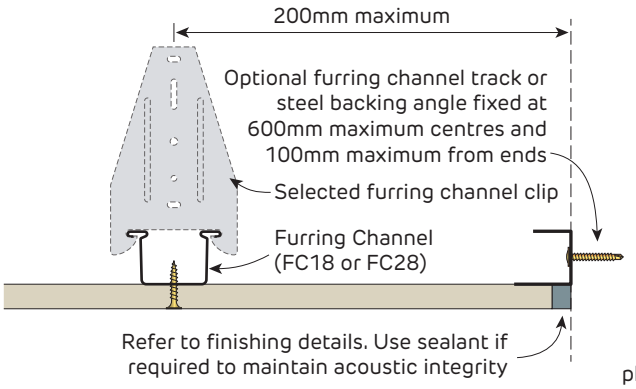


FIGURE 36 Direct Fix Ceiling Frame
Perimeter detail for acoustic integrity
Section

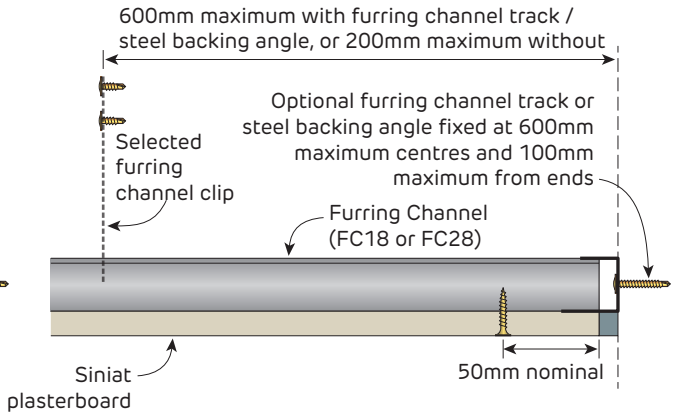


FIGURE 37 Direct Fix Ceiling Frame
Perimeter detail for acoustic integrity
Section

Suspended ceiling systems like battens installed with clips, do not provide sufficient diaphragm action to transfer wind loads from roofs to bracing walls. As such, an alternative method of transferring these loads must be used.

Fire Rated

Internal Ceilings - Direct Fix

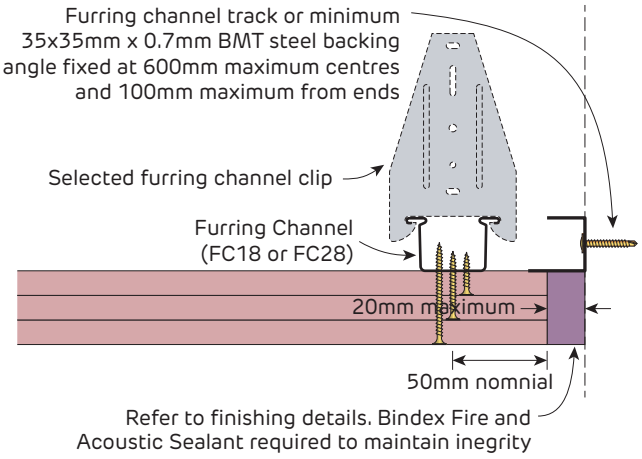


FIGURE 38 Direct Fix Ceiling
Perimeter detail for fire and acoustic integrity
Section

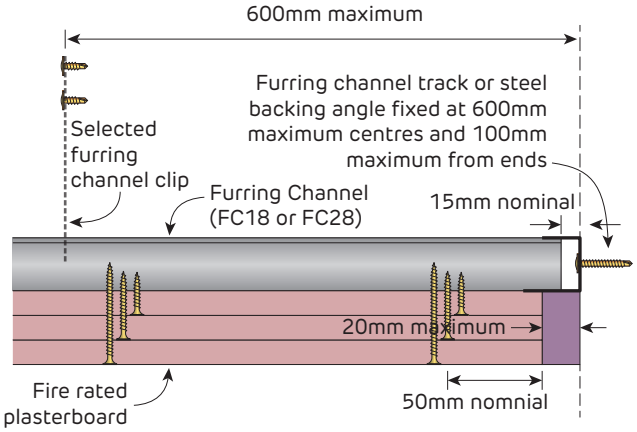


FIGURE 39 Direct Fix Ceiling
Perimeter detail for fire and acoustic integrity
Section

Non-Fire Rated

Seismic Details for Suspended Ceiling - Type A Fixed / Sliding

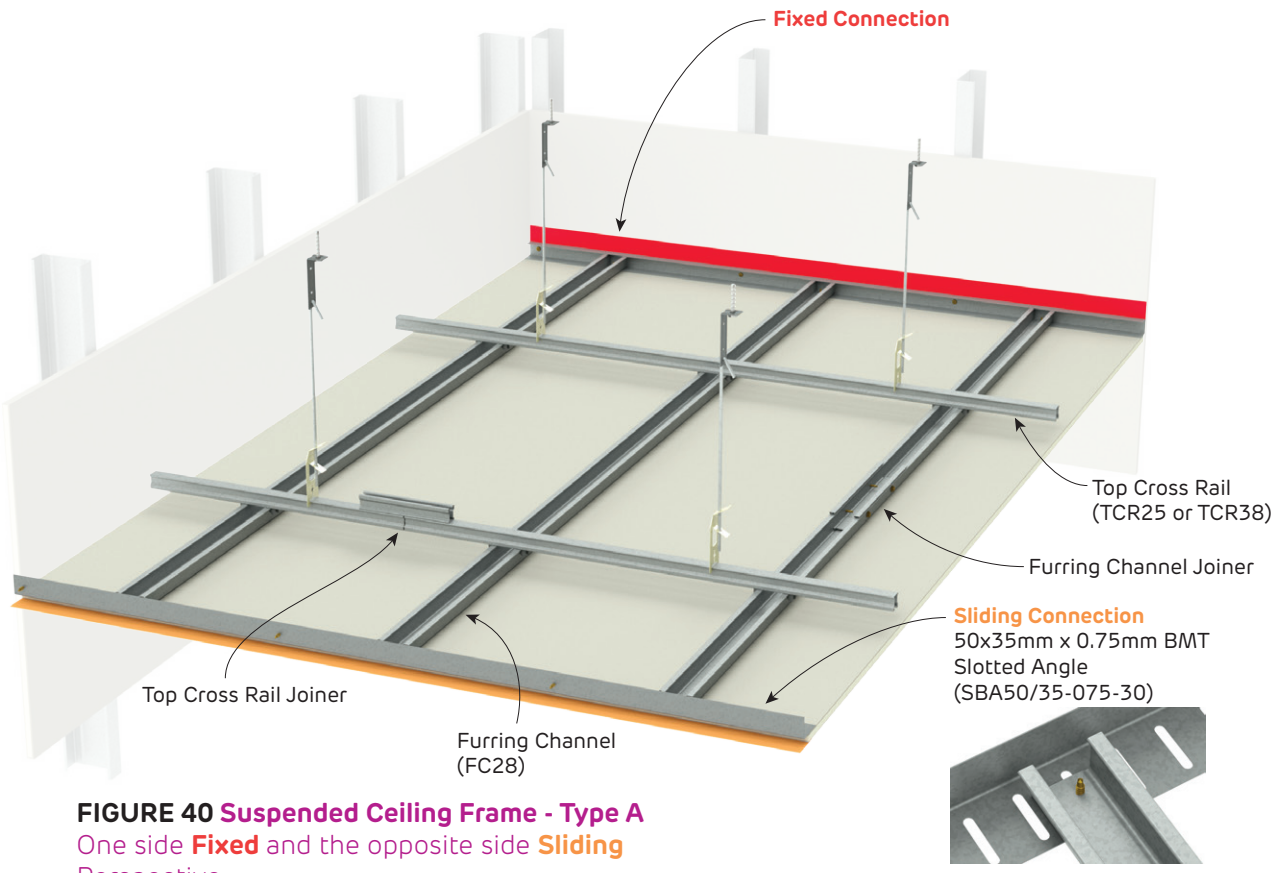
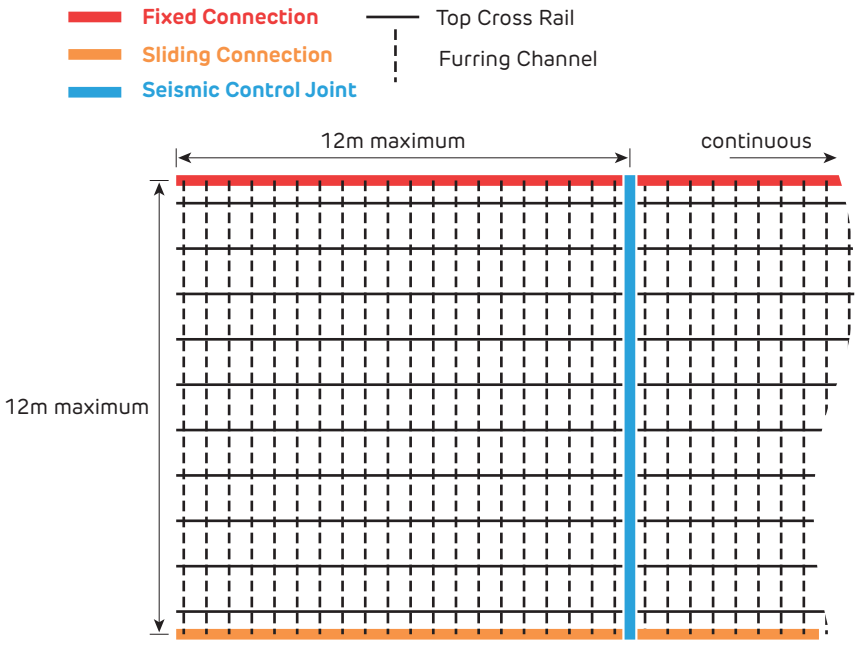


FIGURE 40 Suspended Ceiling Frame - Type A
One side **Fixed** and the opposite side **Sliding**
Perspective



Specific project details must be determined by structural design

FIGURE 41 Suspended Ceiling Frame - Type A Fixed / Sliding
One Side **Fixed** and the opposite Side **Sliding**
Plan

Non-Fire Rated

Seismic Details for Suspended Ceiling - Type A Fixed / Sliding

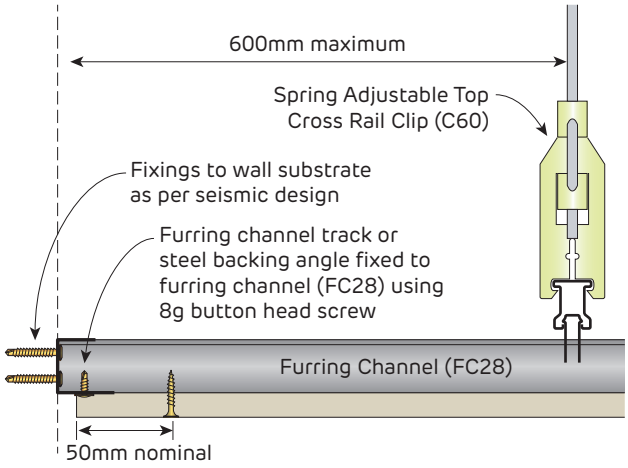


FIGURE 42 Furring Channel Fixed Connection
Perimeter detail
Section

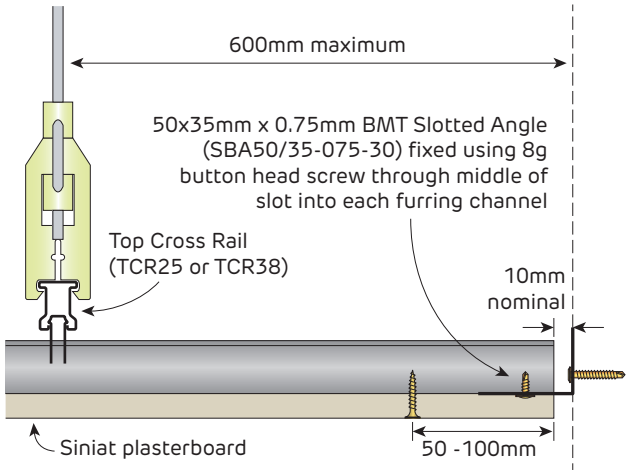


FIGURE 43 Furring Channel Sliding Connection
Perimeter detail
Section

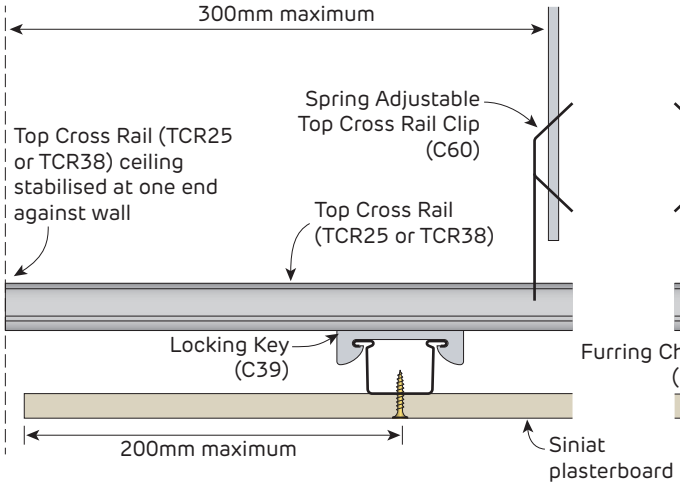


FIGURE 44 Top Cross Rail Stabilised End Detail
Perimeter detail
Section

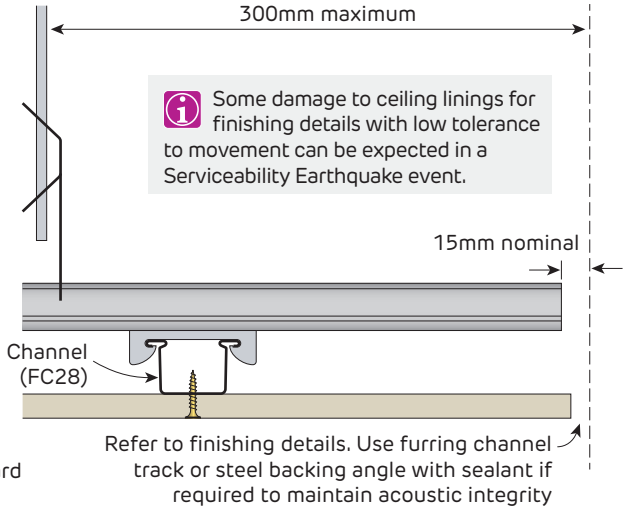


FIGURE 45 Top Cross Rail End Detail
Perimeter detail
Section

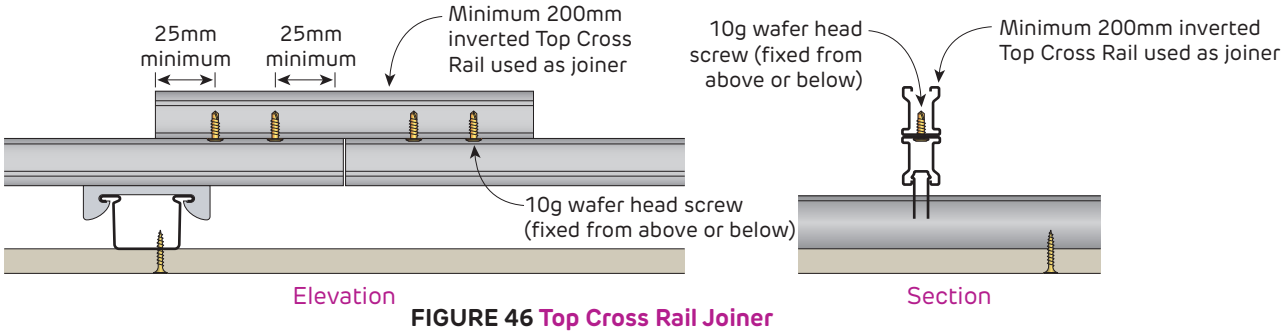


FIGURE 46 Top Cross Rail Joiner
For Type A Suspended Ceilings

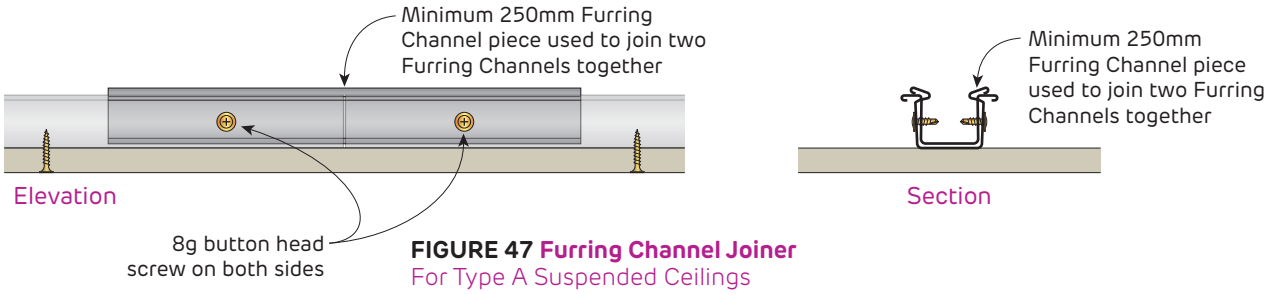


FIGURE 47 Furring Channel Joiner
For Type A Suspended Ceilings

Non-Fire Rated

Bulkhead Details for Suspended Ceiling - Type A

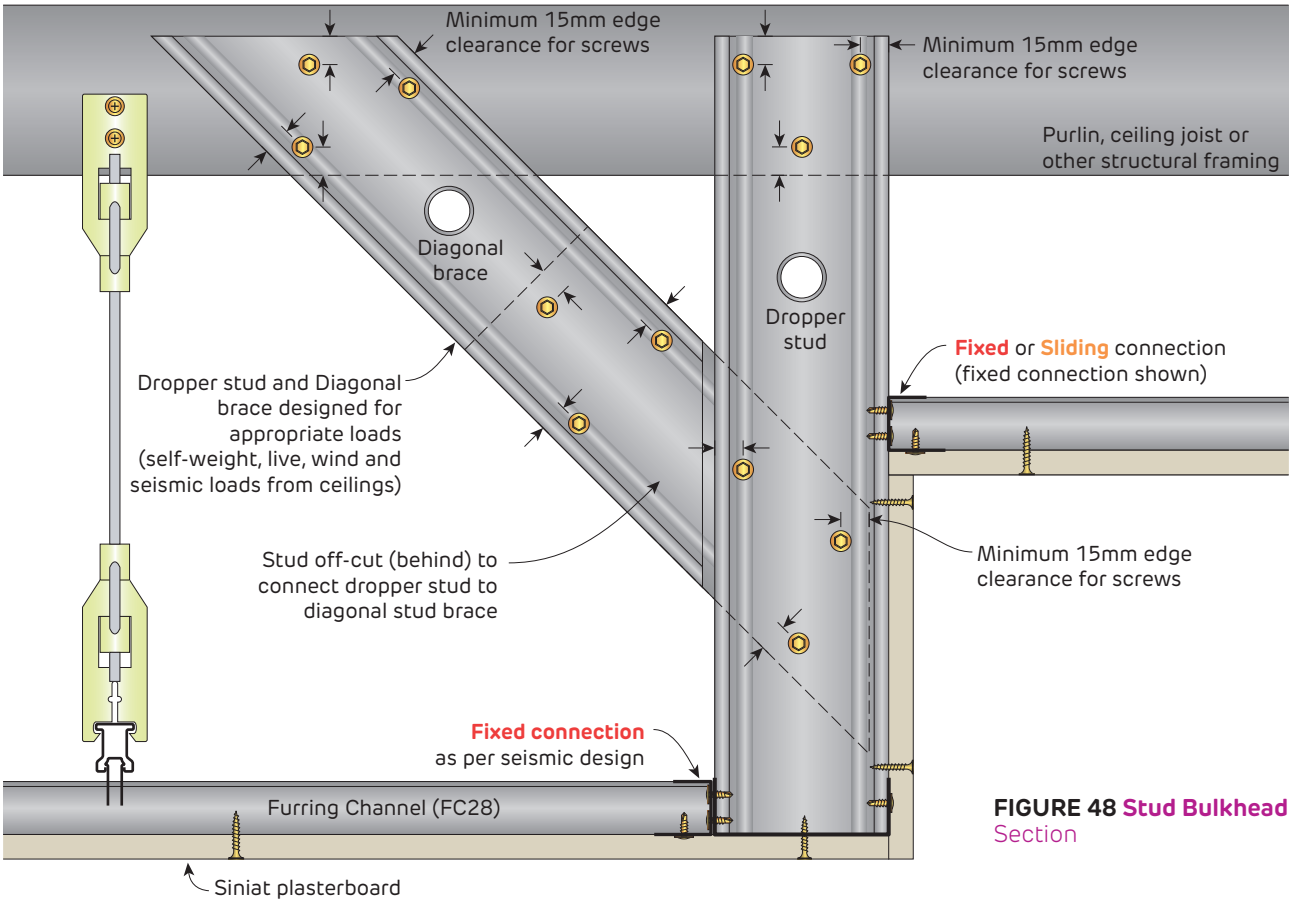


FIGURE 48 Stud Bulkhead Section

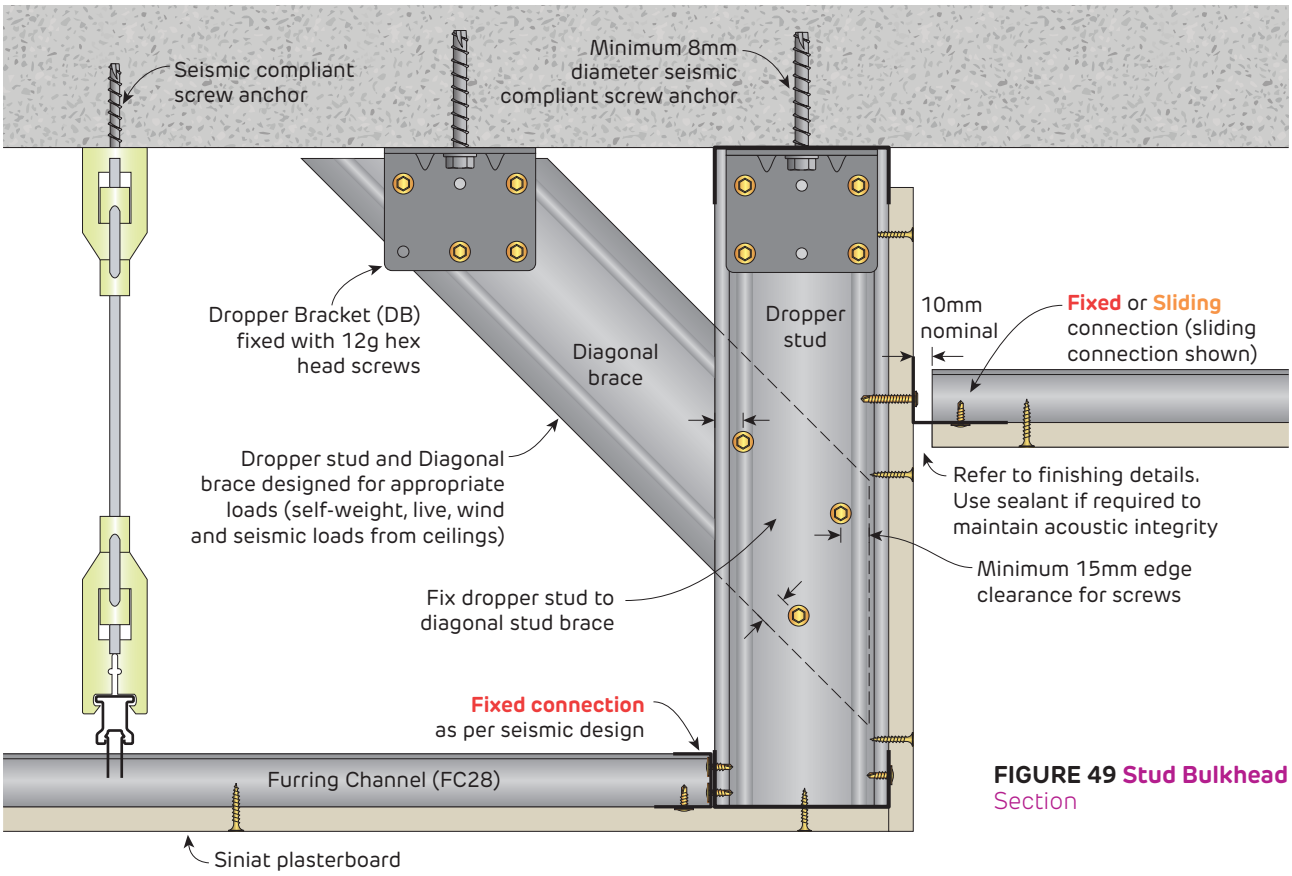


FIGURE 49 Stud Bulkhead Section

Fire Rated
Seismic Details for Suspended Ceiling - Type A Fixed / Sliding

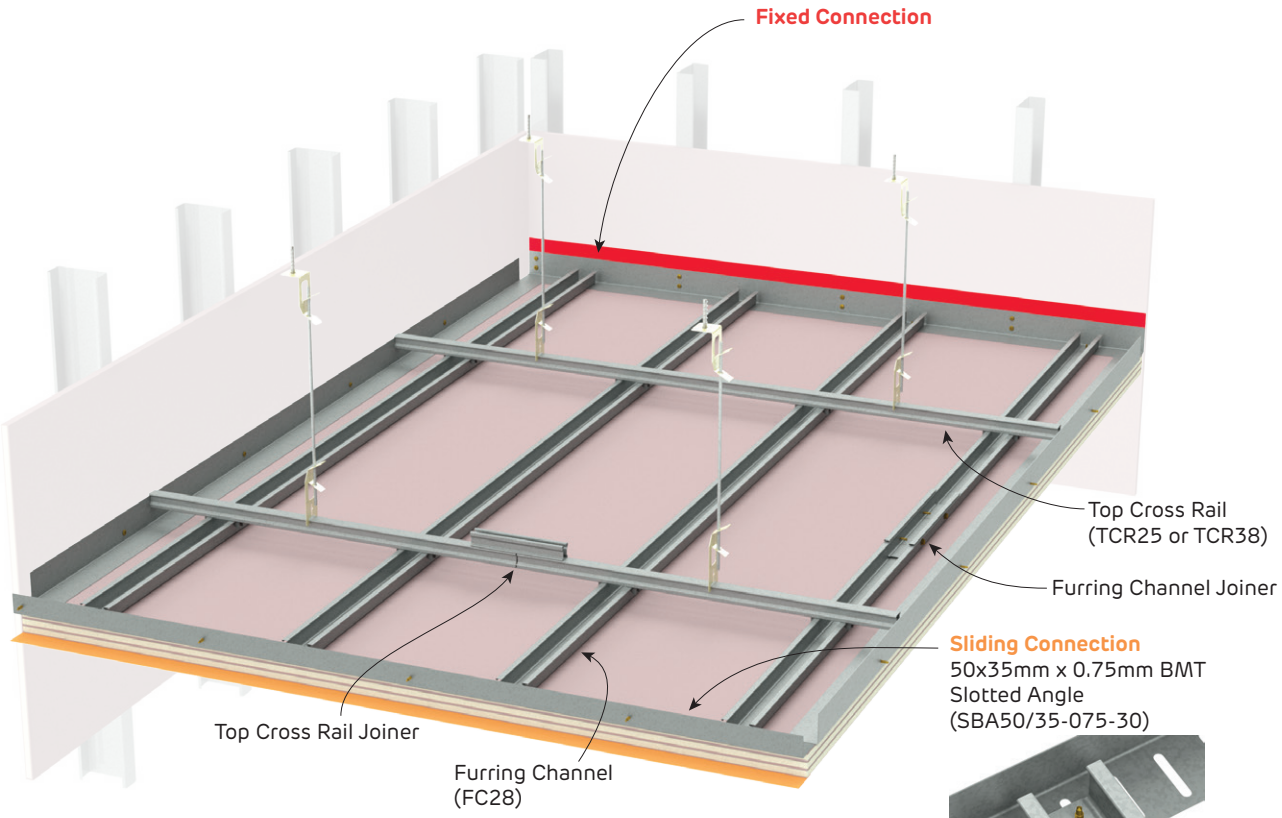
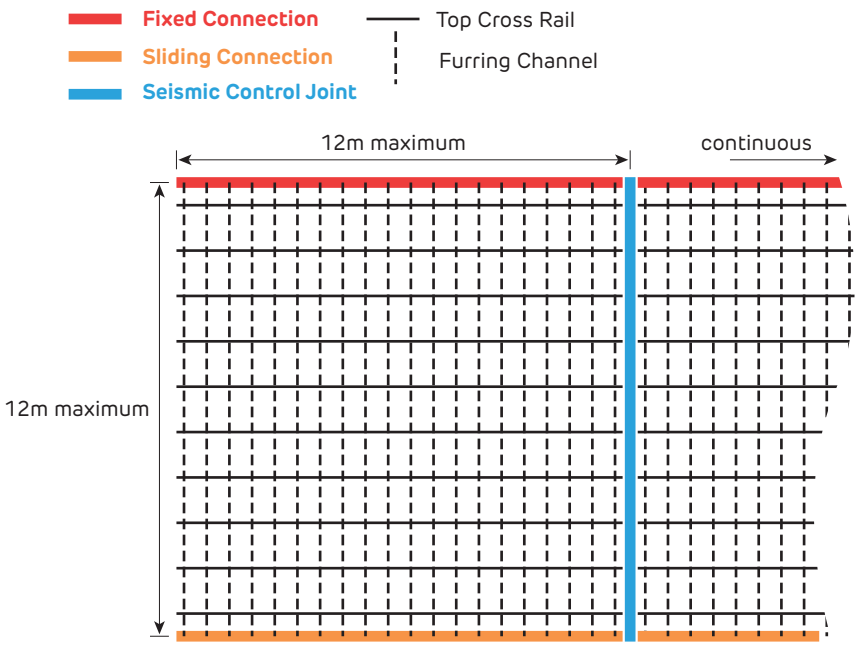


FIGURE 50 Suspended Ceiling Frame - Type A
One side **Fixed** and the opposite side **Sliding**
Perspective



Specific project details must be determined by structural design

FIGURE 51 Suspended Ceiling Frame - Type A Fixed / Sliding
One side **Fixed** and the opposite side **Sliding**
Plan

Fire Rated
Seismic Details for Suspended Ceiling - Type A Fixed / Sliding

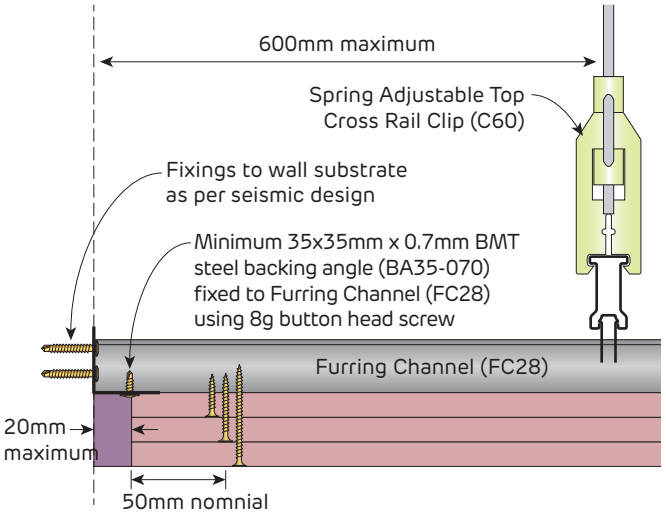


FIGURE 52 Furring Channel Fixed Connection
Perimeter detail
Section

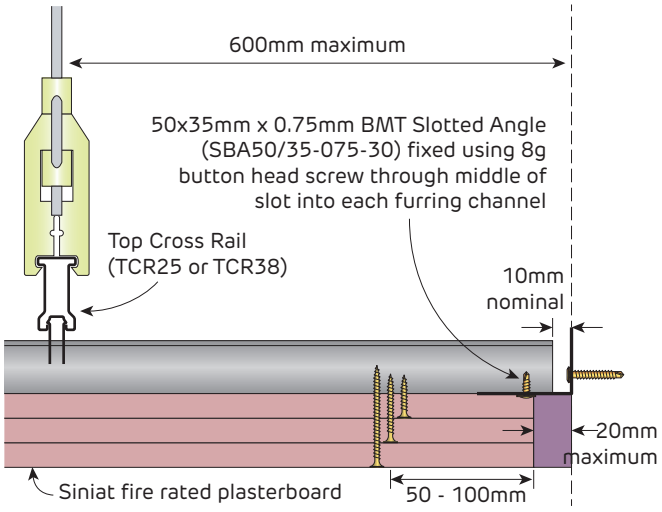


FIGURE 53 Furring Channel Sliding Connection
Perimeter detail
Section

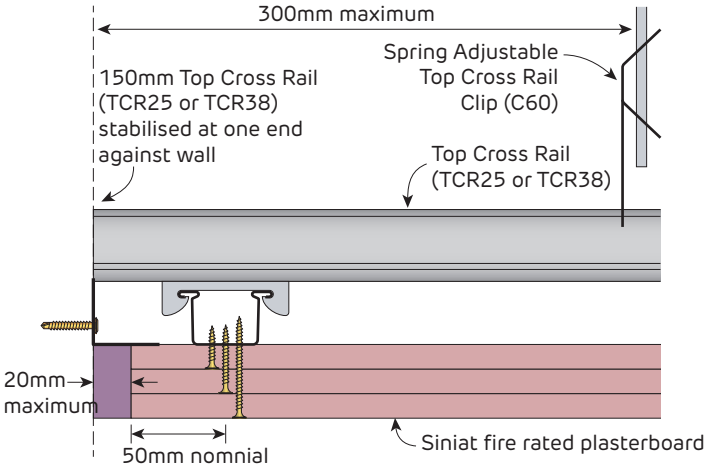


FIGURE 54 Top Cross Rail Stabilised End Detail
Perimeter detail
Section

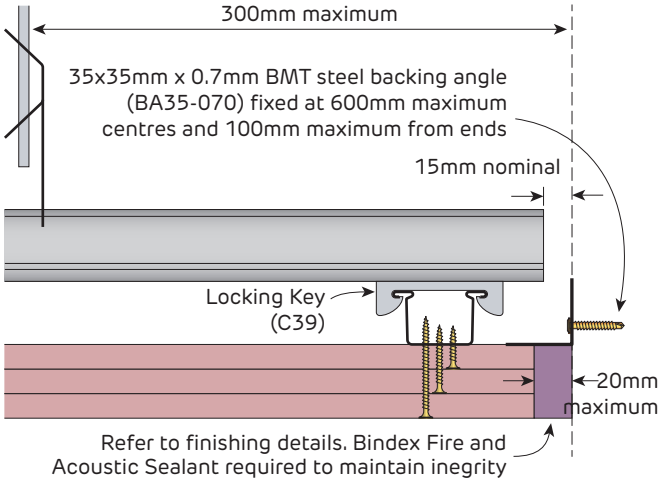


FIGURE 55 Top Cross Rail End Detail
Perimeter detail
Section

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

Fire Rated
Seismic Details for Suspended Ceiling - Type A Fixed / Sliding

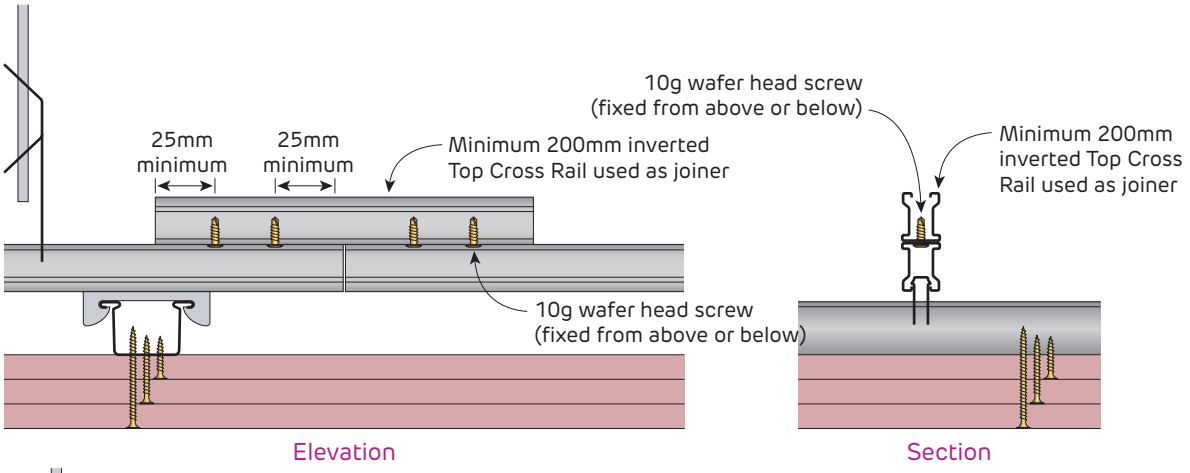


FIGURE 56 Top Cross Rail Joiner
For Type A Suspended Ceilings

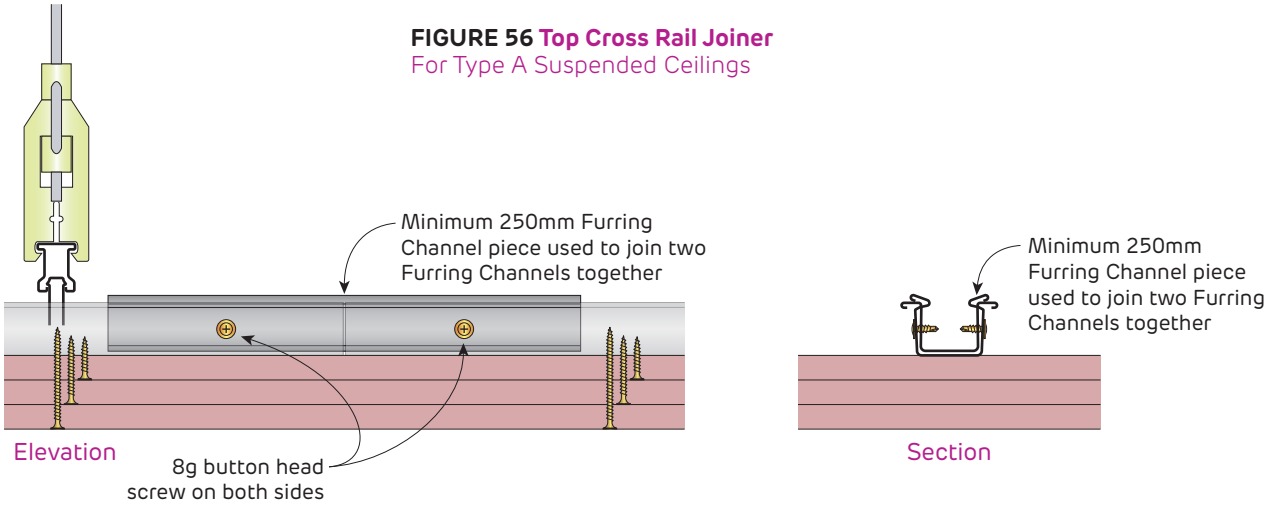


FIGURE 57 Furring Channel Joiner
For Type A Suspended Ceilings

Fire Rated
Bulkhead Details for Suspended Ceiling - Type A

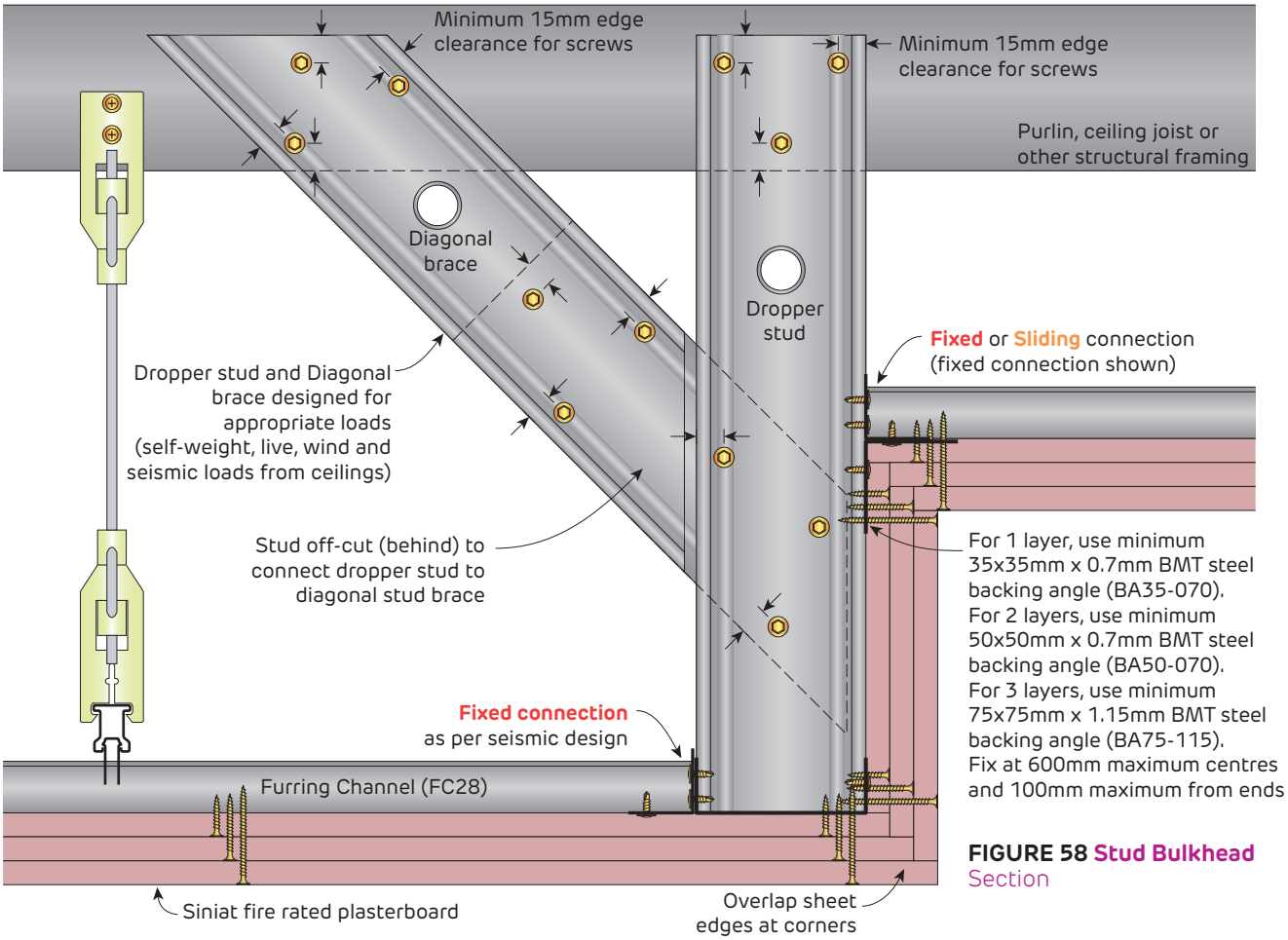


FIGURE 58 Stud Bulkhead Section

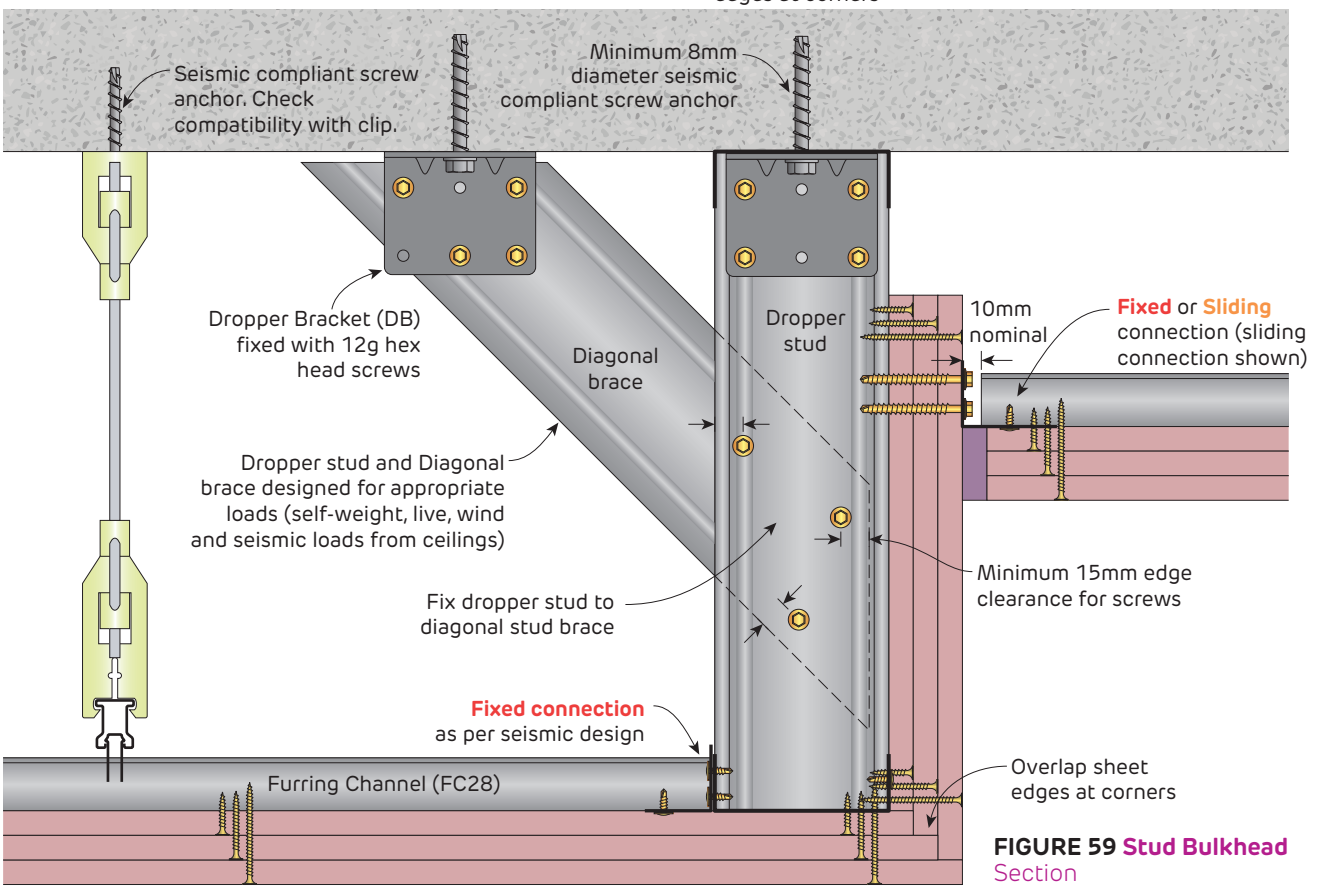


FIGURE 59 Stud Bulkhead Section

Non-Fire Rated

Seismic Details for Suspended Ceiling - Type B1 and B2 Fixed / Free

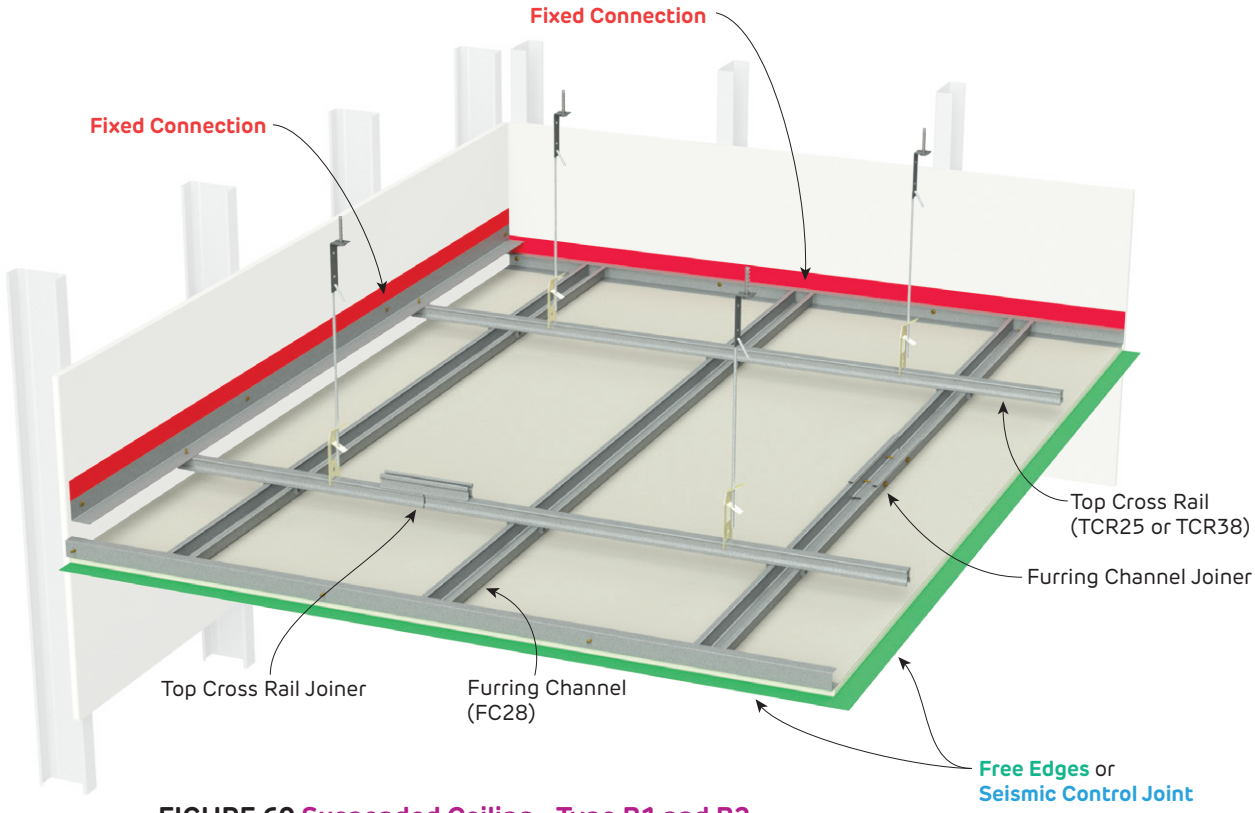


FIGURE 60 Suspended Ceiling - Type B1 and B2
Two adjacent sides **Fixed** and two adjacent sides **Free**
Perspective

Fire Rated

Seismic Details for Internal Suspended Ceiling - Type B1 and B2 Fixed / Free

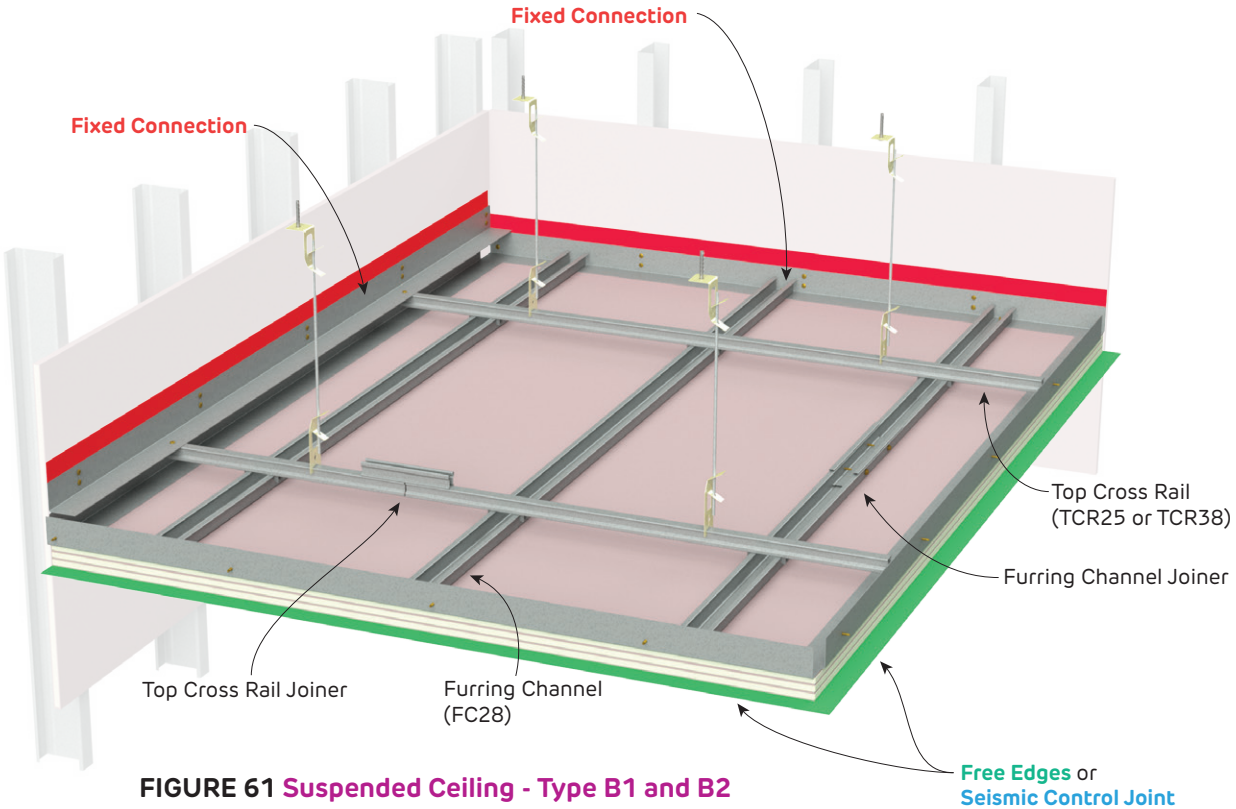


FIGURE 61 Suspended Ceiling - Type B1 and B2
Two adjacent sides **Fixed** and two adjacent sides **Free**
Perspective

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type B1 and B2 Fixed / Free

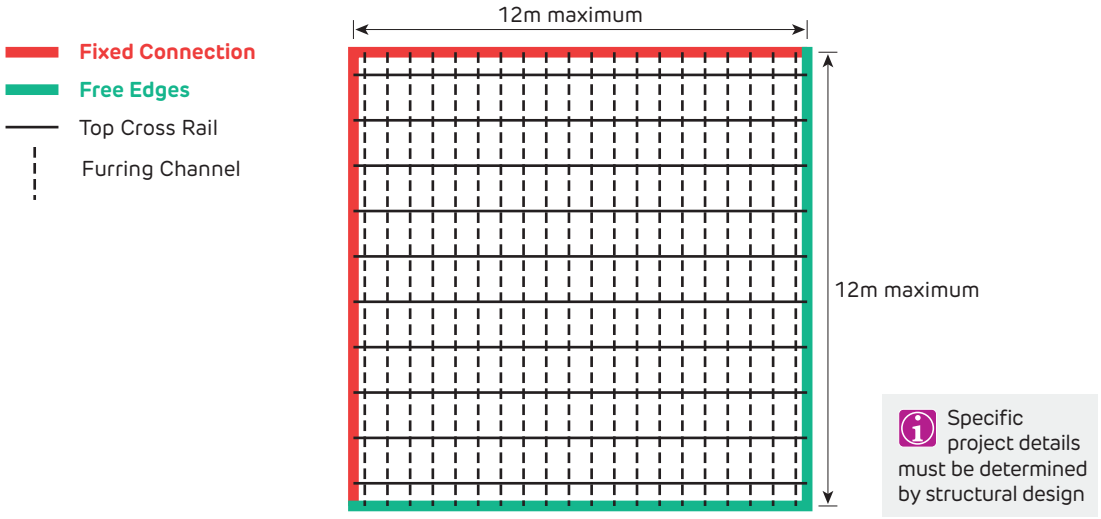


FIGURE 62 Suspended Ceiling - Type B1
Two adjacent sides **Fixed** and two adjacent sides **Free**
Plan

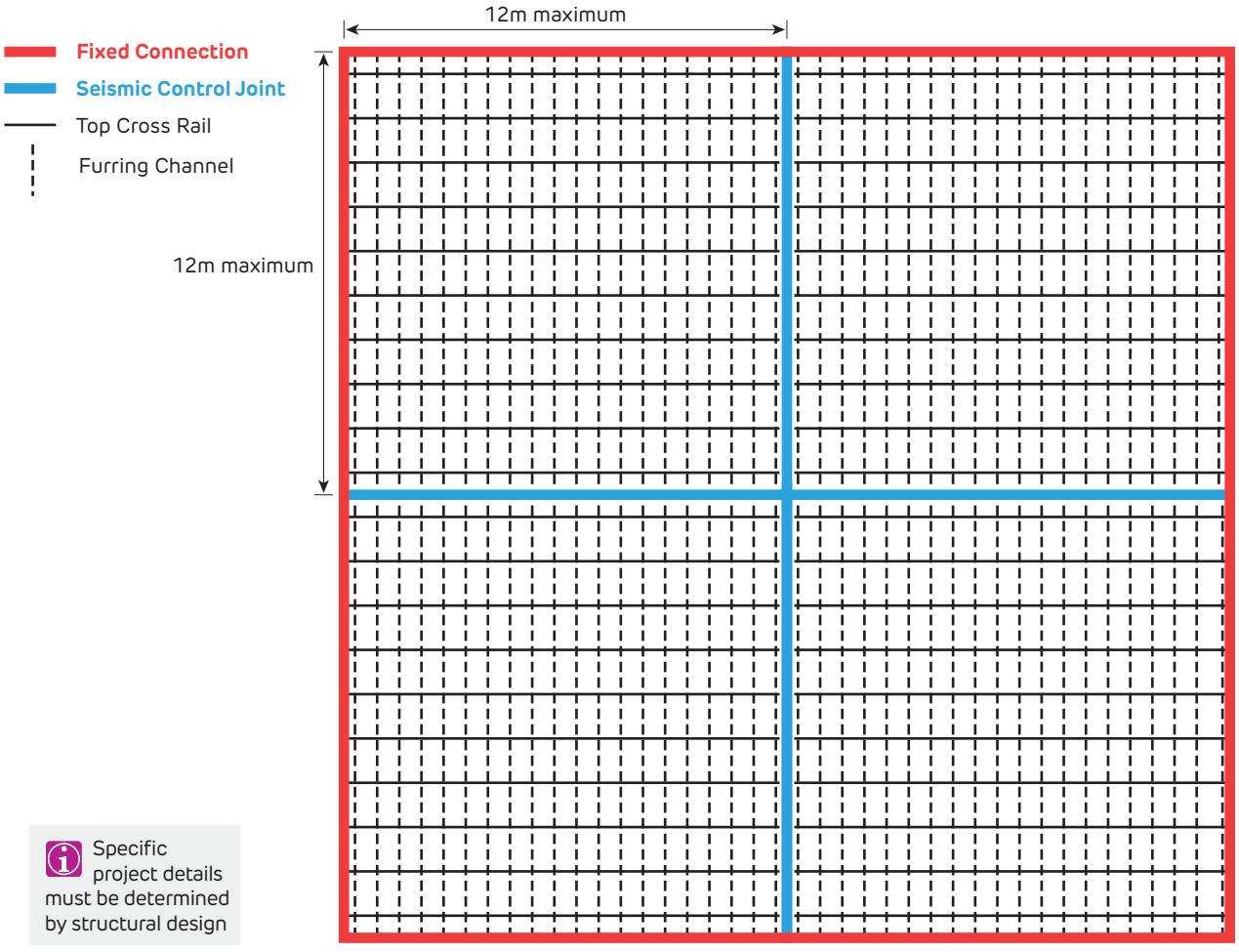


FIGURE 63 Suspended Ceiling - Type B2
Four sides **Fixed** with internal **Seismic Control Joint**
Plan

Non-Fire Rated
Seismic Details for Suspended Ceiling - Type B1 and B2 Fixed / Free

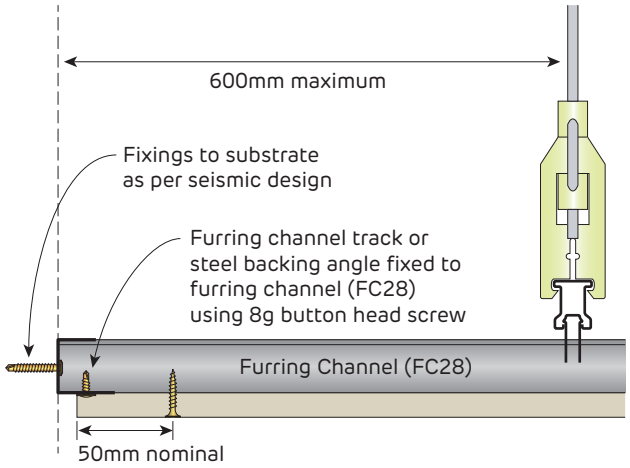


FIGURE 64 Furring Channel Fixed Connection
Perimeter detail
Section

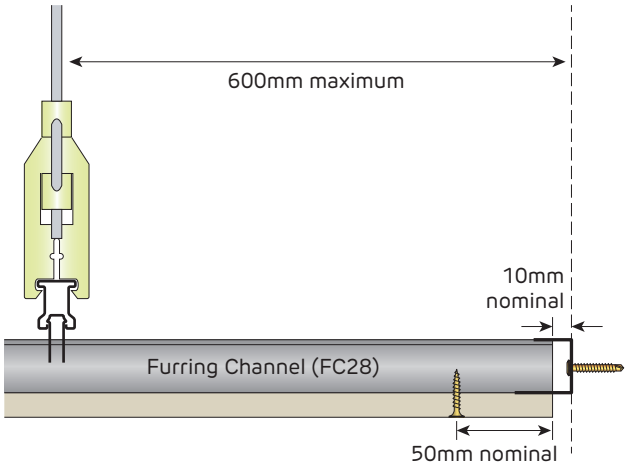


FIGURE 65 Furring Channel Free Edge
Perimeter detail
Section

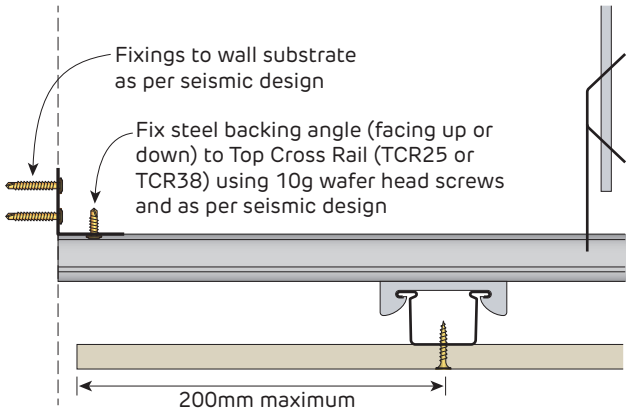


FIGURE 66 Top Cross Rail Fixed Connection
Perimeter detail
Section

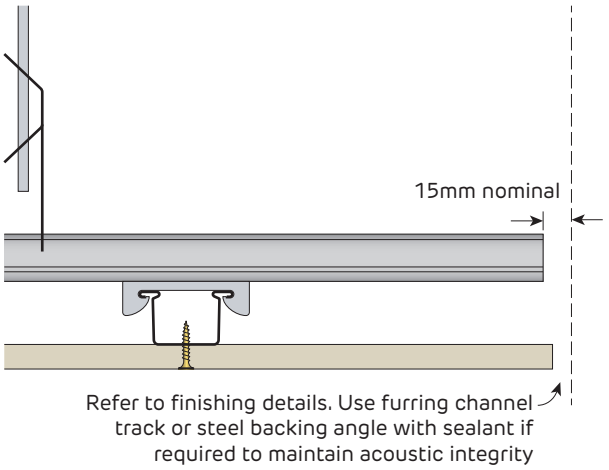


FIGURE 67 Top Cross Rail Free Edge
Perimeter detail
Section

Non-Fire Rated
Seismic Details for Suspended Ceiling - Type B2

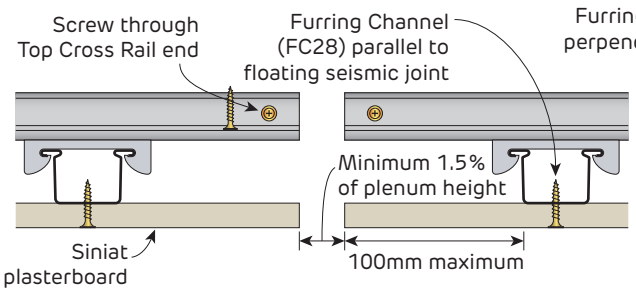


FIGURE 68 Seismic Control Joint
Parallel to furring channel
Section

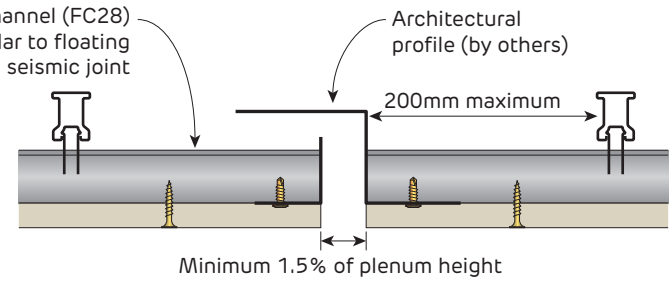


FIGURE 69 Seismic Control Joint
Perpendicular to furring channel
Section

Fire Rated

Seismic Details for Suspended Ceiling - Type B1 and B2 Fixed / Free

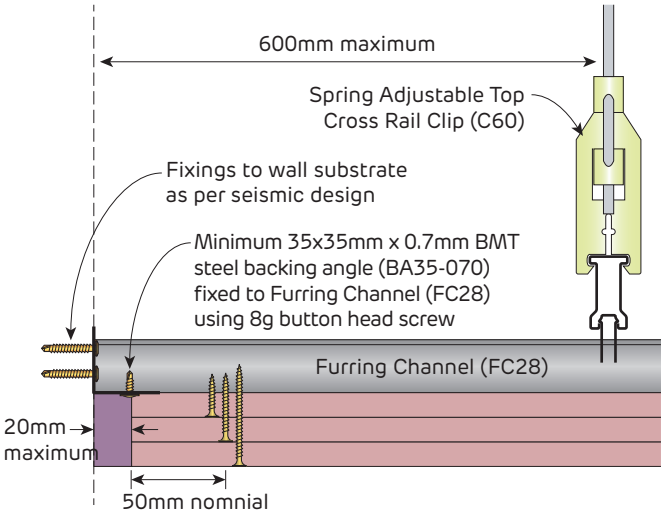


FIGURE 70 Furring Channel Fixed Connection
Perimeter detail
Section

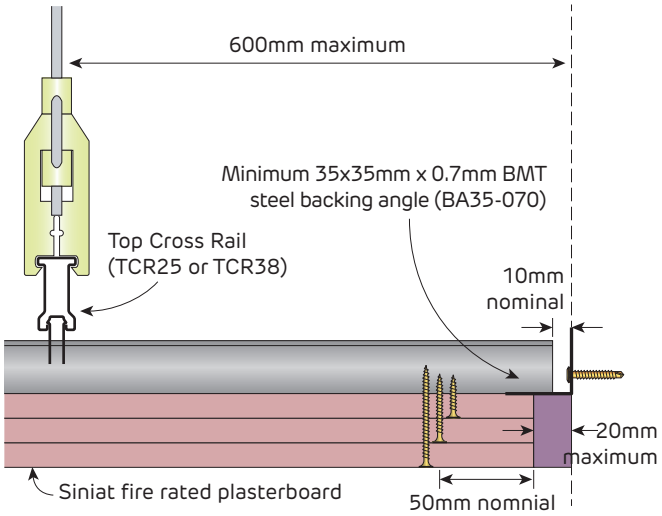


FIGURE 71 Furring Channel Free Edge
Perimeter detail
Section

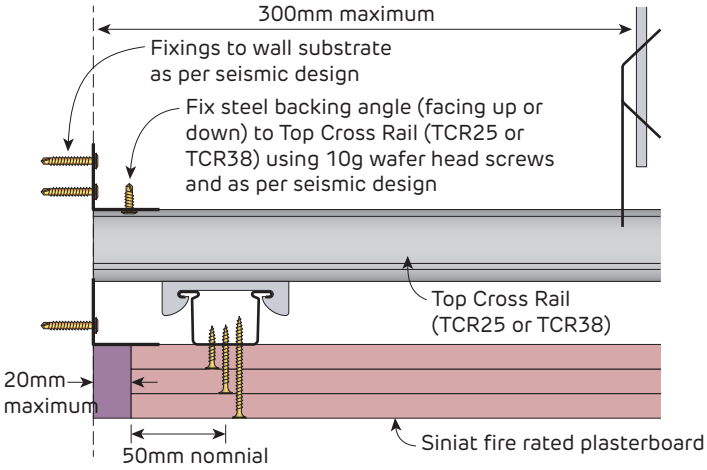


FIGURE 72 Top Cross Rail Fixed Connection
Perimeter detail
Section

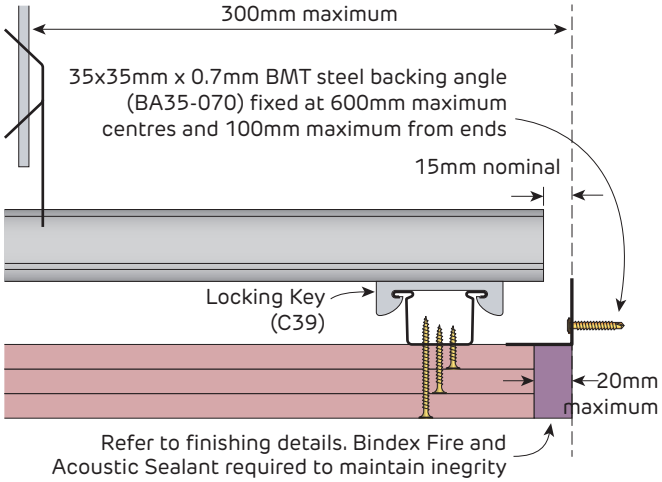


FIGURE 73 Top Cross Rail Free Edge
Perimeter detail
Section

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type B1 and B2 Fixed / Free

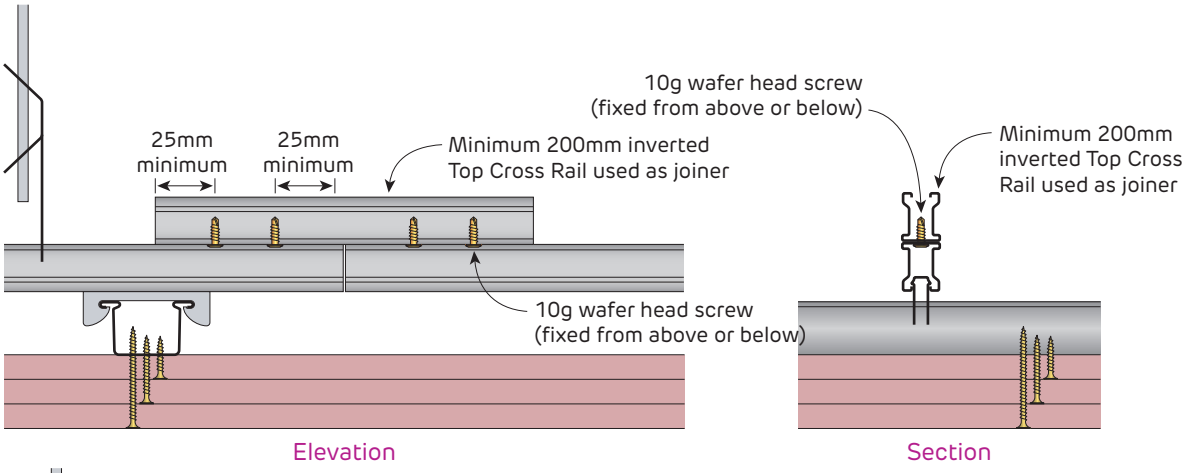


FIGURE 74 Top Cross Rail Joiner
For Type B1 and B2 Suspended Ceilings

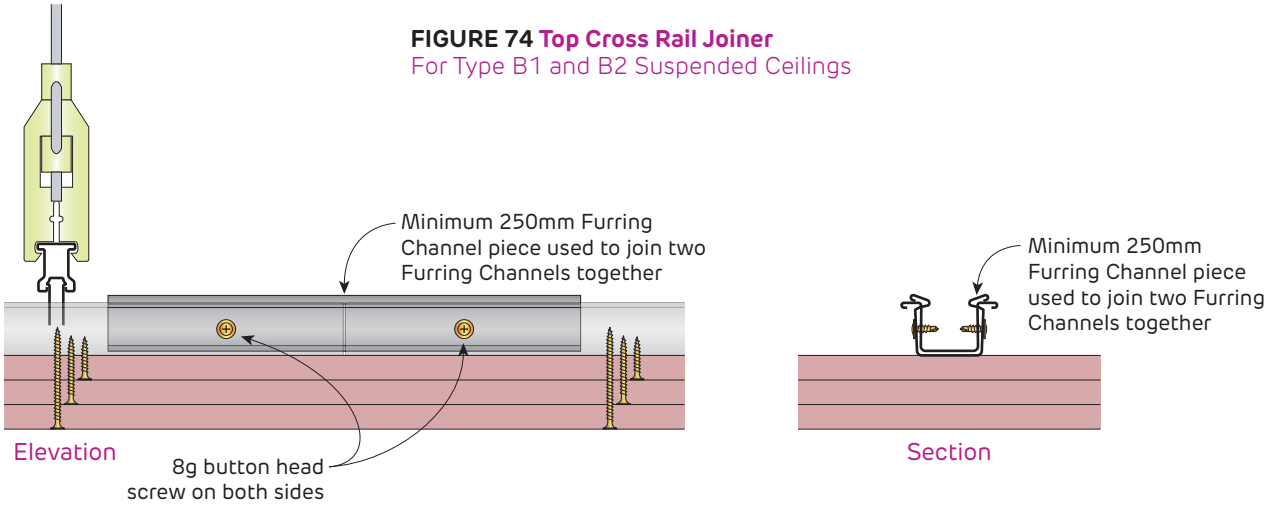


FIGURE 75 Furring Channel Joiner
For Type B1 and B2 Suspended Ceilings

Non-Fire Rated

Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

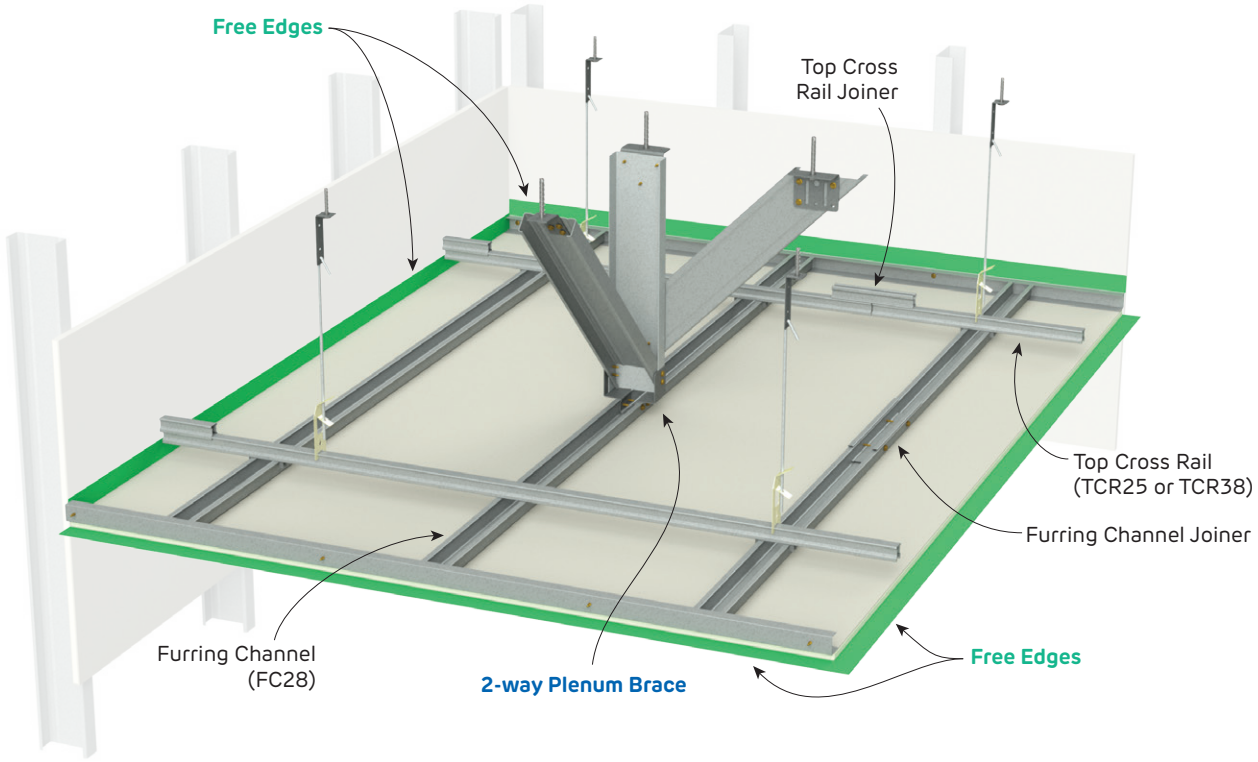


FIGURE 76 Suspended Ceiling - Type C, 2-way Plenum Braced
2-way Plenum Brace with four sides Free
Perspective

Fire Rated

Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

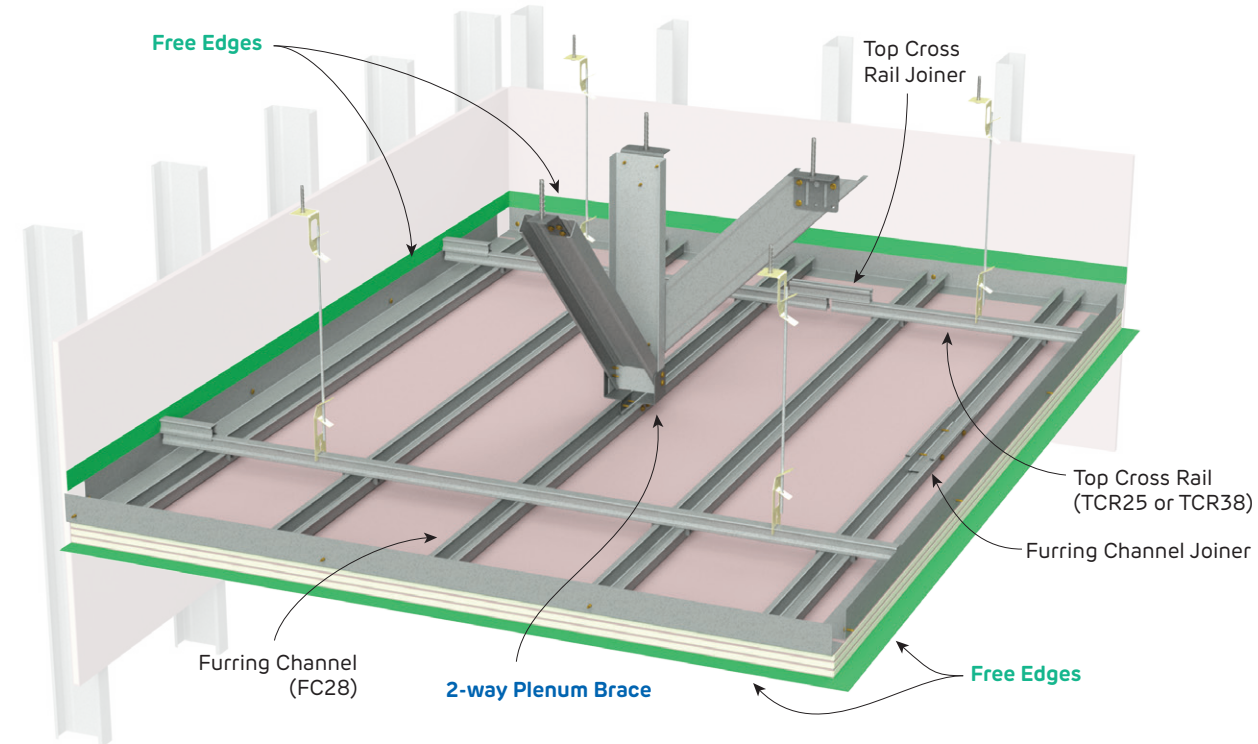


FIGURE 77 Suspended Ceiling Frame - Type C, 2-way Plenum Braced
2-way Plenum Brace with four sides Free
Perspective

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

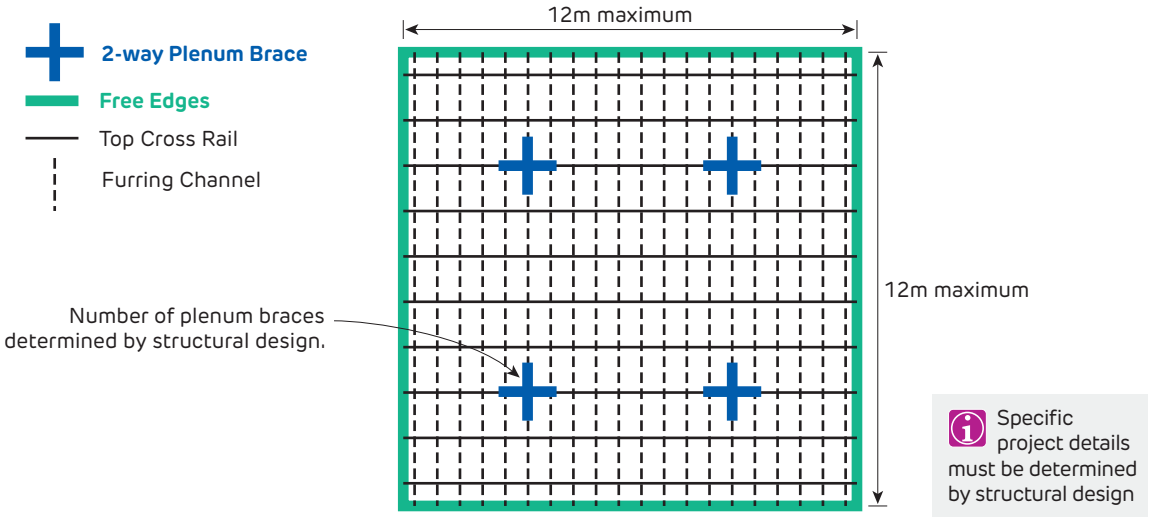


FIGURE 78 Suspended Ceiling - Type C, 2-way Plenum Braced
2-way Plenum Brace with four sides **Free**
Plan

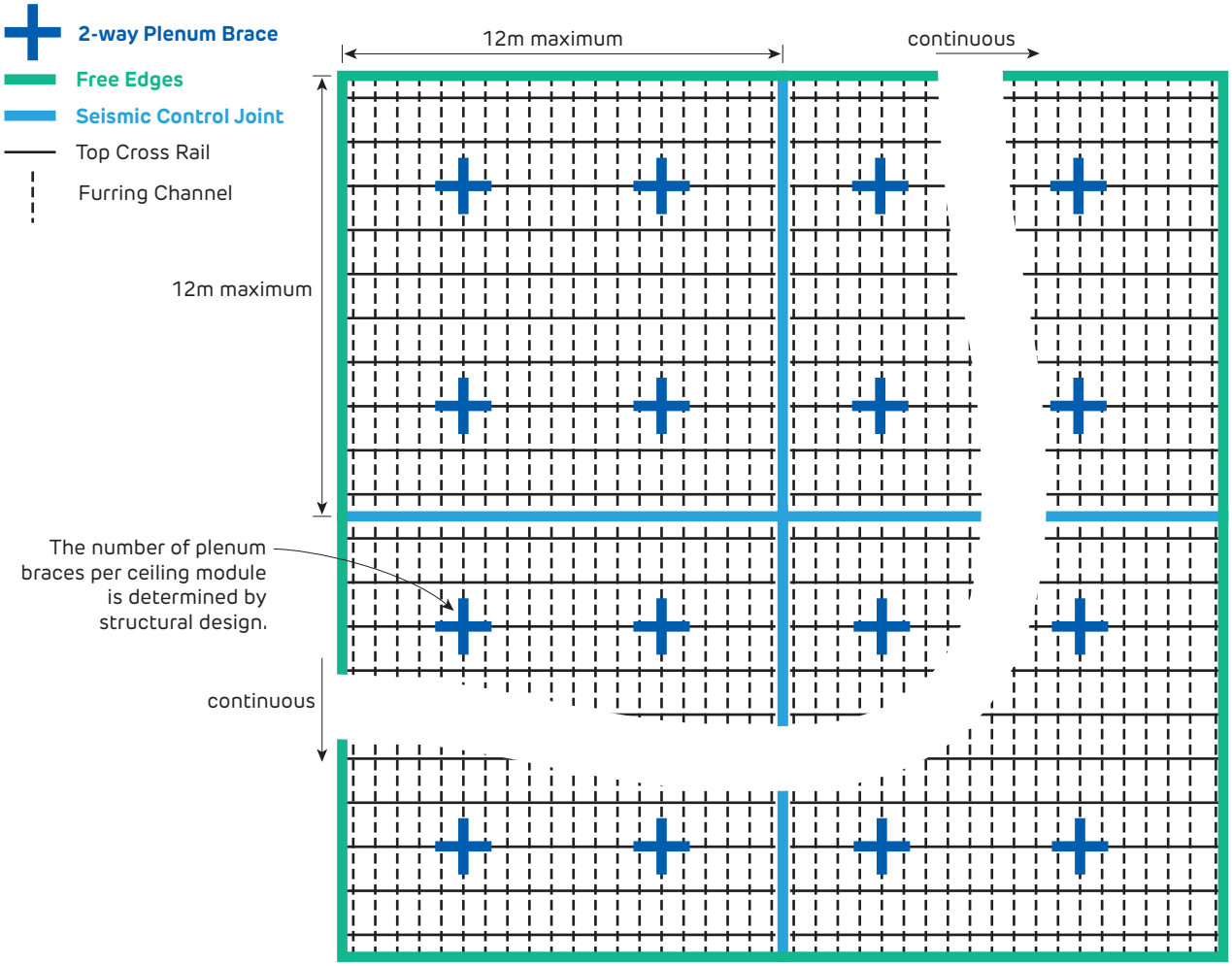


FIGURE 79 Suspended Ceiling - Type C, 2-way Plenum Braced
2-way Plenum Brace with four sides **Free**
Plan

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

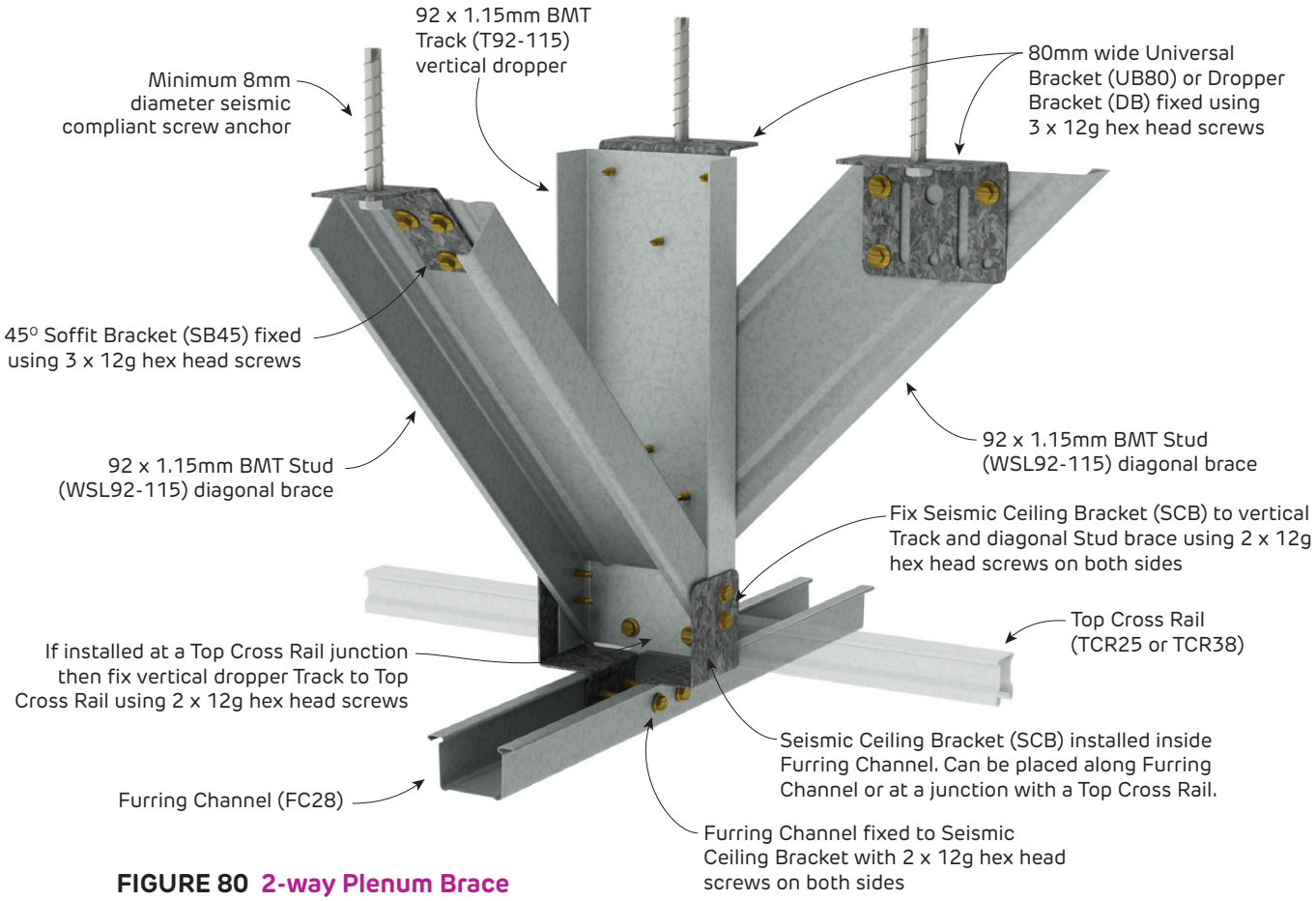


FIGURE 80 2-way Plenum Brace
Perspective

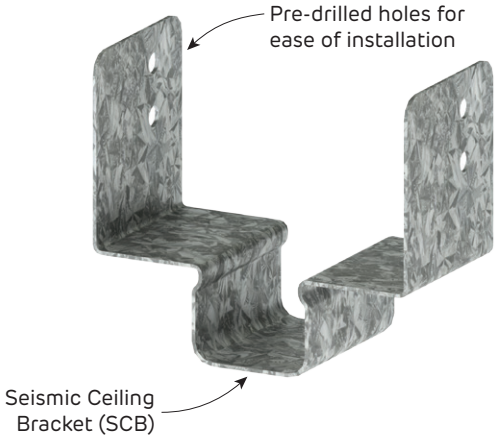


FIGURE 81 Seismic Ceiling Bracket
Perspective

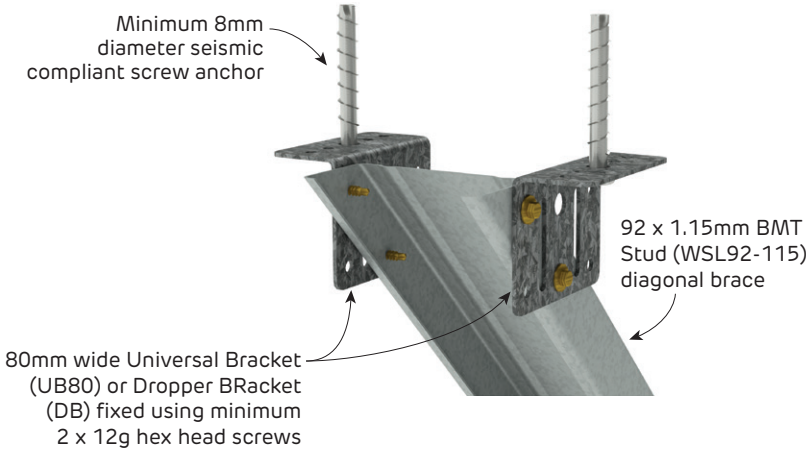


FIGURE 82 Alternative Diagonal Brace Soffit Connection
Perspective

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

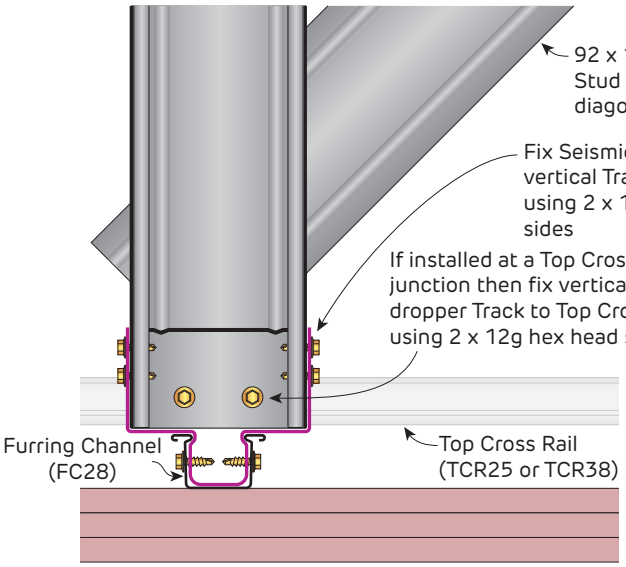


FIGURE 83 2-way Plenum Brace
Section

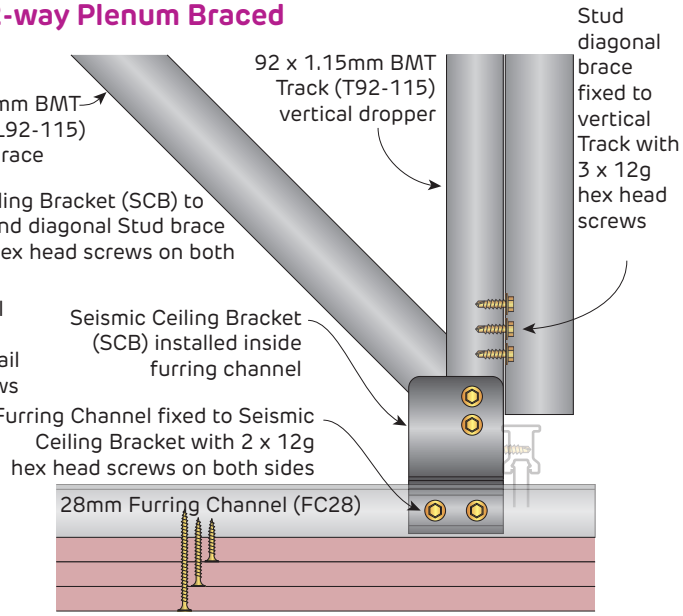


FIGURE 84 2-way Plenum Brace
Elevation

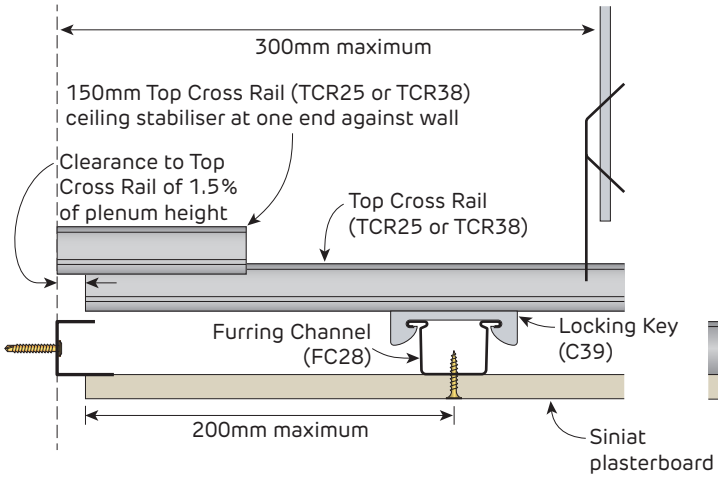


FIGURE 85 Top Cross Rail Free Edges
Perimeter detail
Section

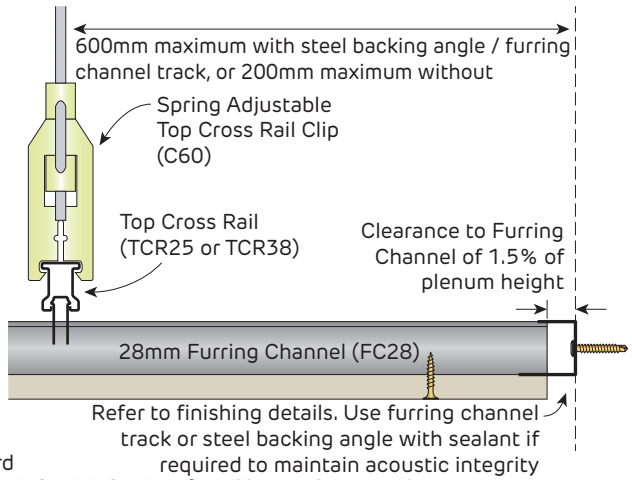


FIGURE 86 Furring Channel Free Edges
Perimeter detail
Section

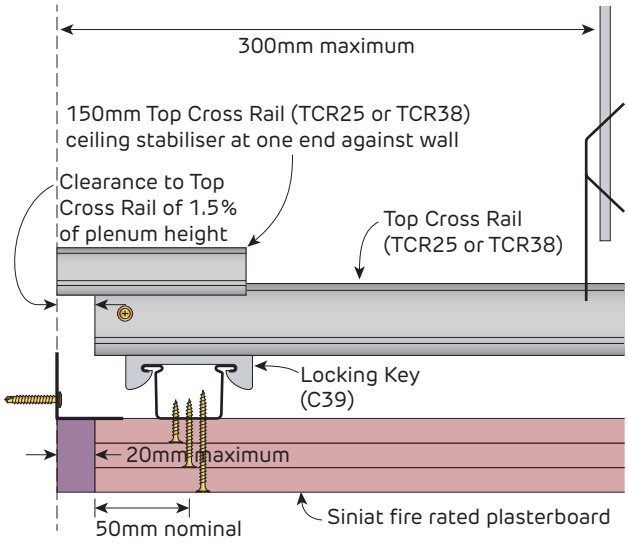


FIGURE 87 Top Cross Rail Free Edges
Perimeter detail
Section

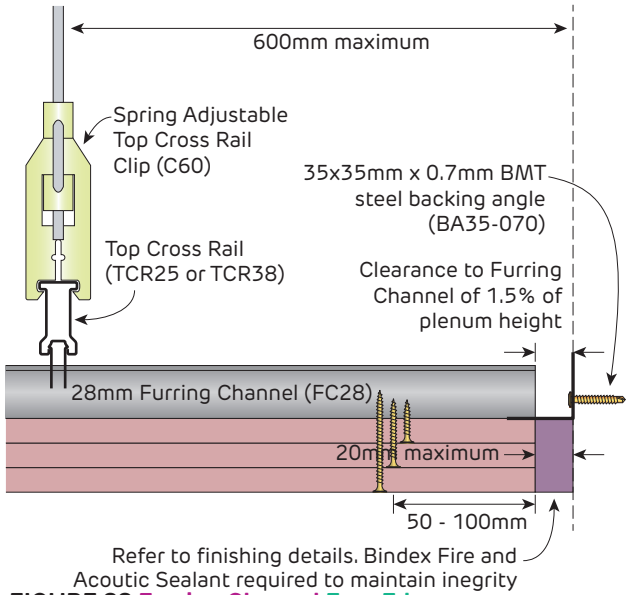


FIGURE 88 Furring Channel Free Edges
Perimeter detail
Section

Fire Rated and Non-Fire Rated
Seismic Details for Suspended Ceiling - Type C, 2-way Plenum Braced

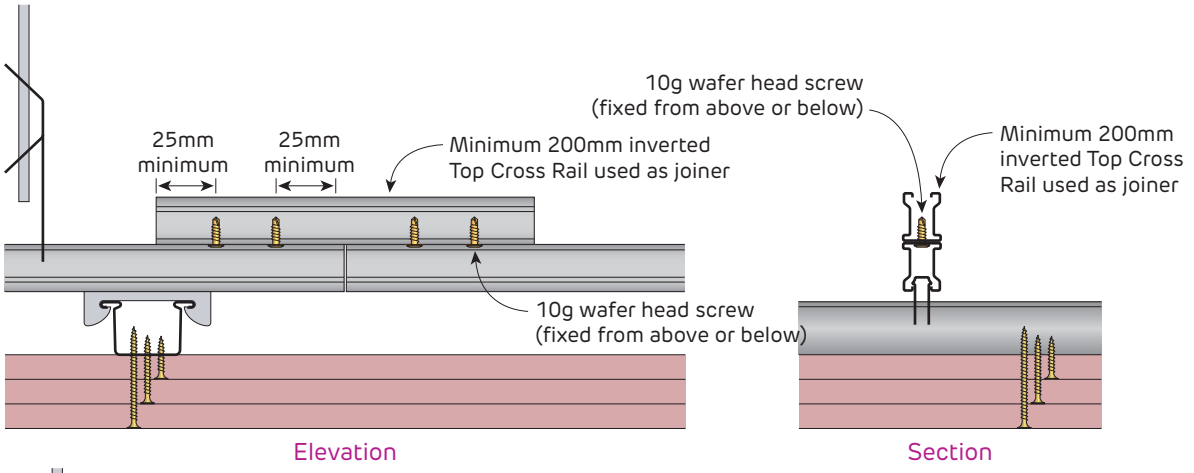


FIGURE 89 Top Cross Rail Joiner
For Type C Suspended Ceilings

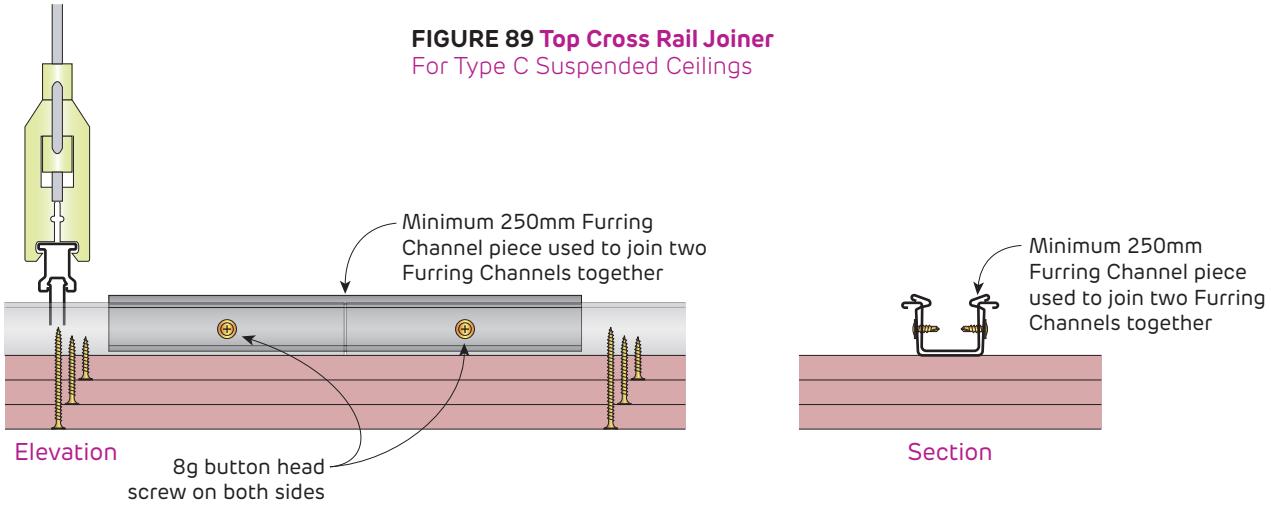


FIGURE 90 Furring Channel Joiner
For Type C Suspended Ceilings

Non-Fire Rated

Bulkhead Details for Suspended Ceiling - Type C, 2-way Plenum Braced

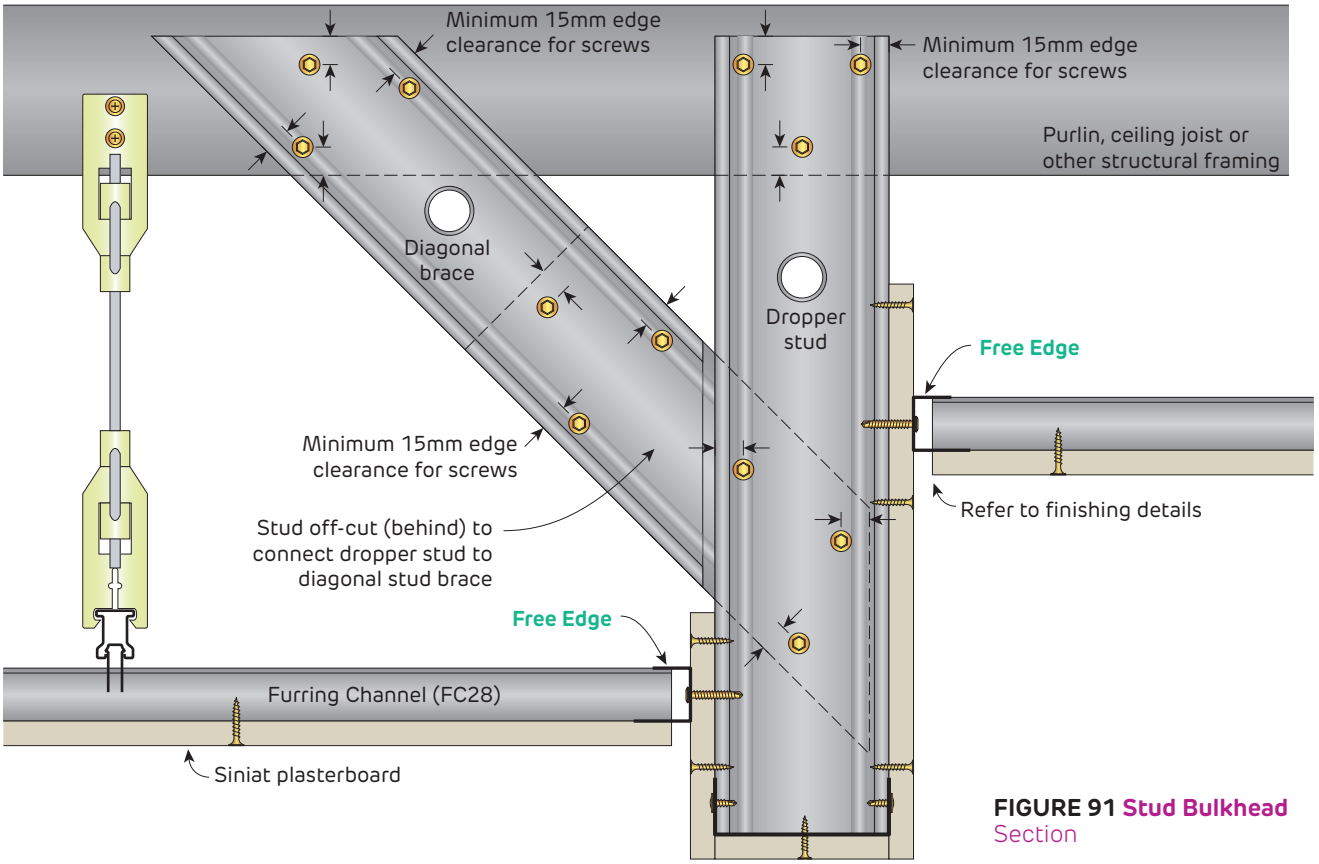


FIGURE 91 Stud Bulkhead
Section

Non-Fire Rated
Control Joint Details for Suspended Ceilings

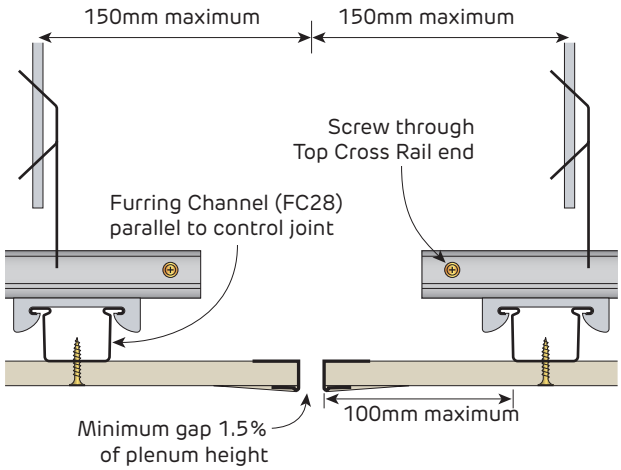


FIGURE 92 Seismic Control Joint
Parallel to furring channel
Section

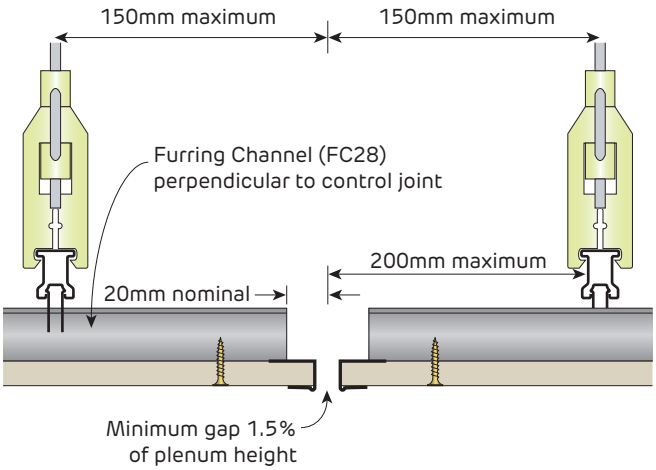


FIGURE 93 Seismic Control Joint
Perpendicular to furring channel
Section

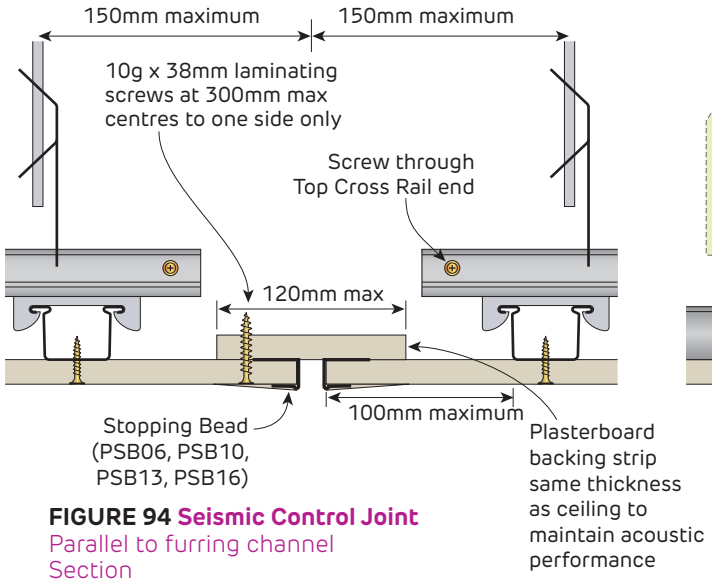


FIGURE 94 Seismic Control Joint
Parallel to furring channel
Section

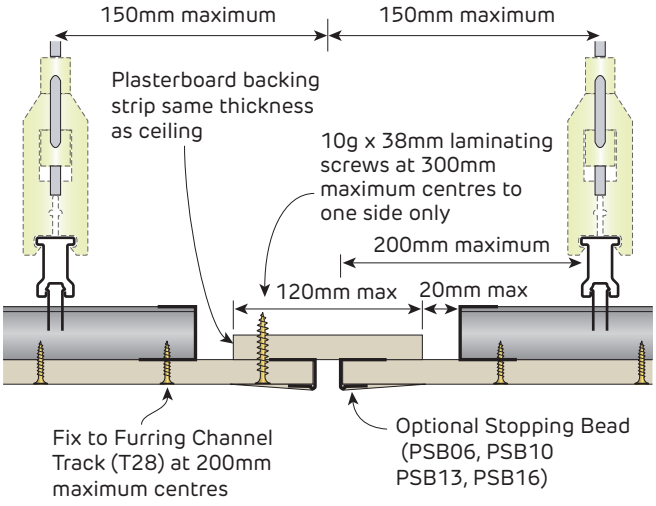


FIGURE 95 Seismic Control Joint
Perpendicular to furring channel
Section

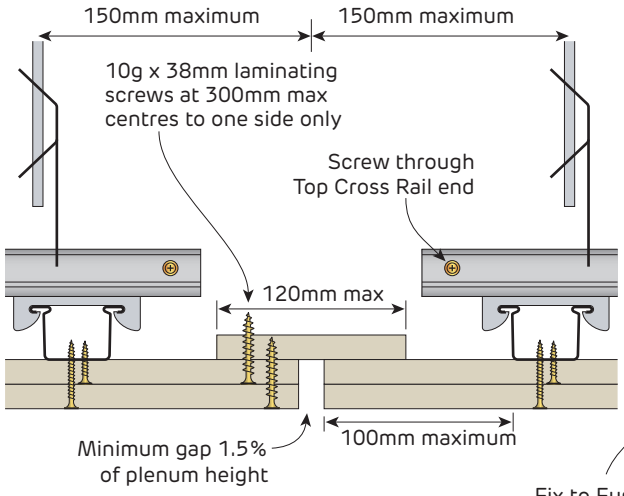


FIGURE 96 Seismic Control Joint
Parallel to furring channel
Section

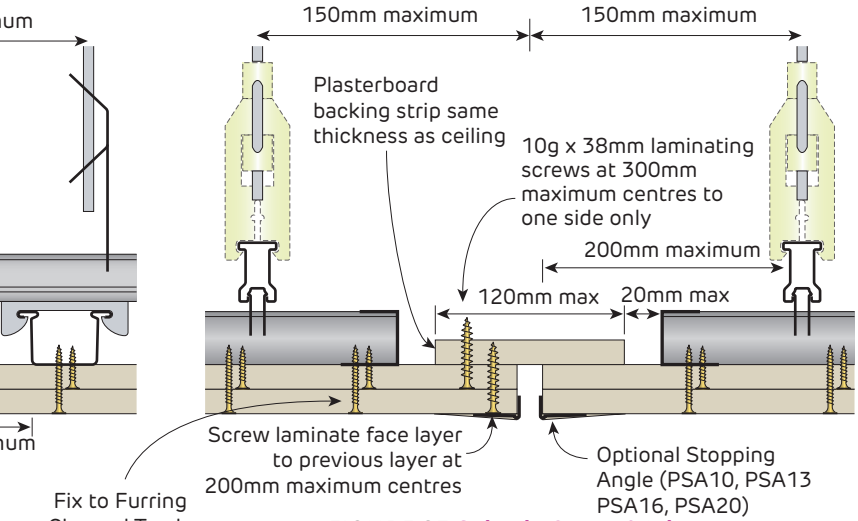


FIGURE 97 Seismic Control Joint
Perpendicular to furring channel
Section

Fire Rated
Control Joint Details for Suspended Ceilings

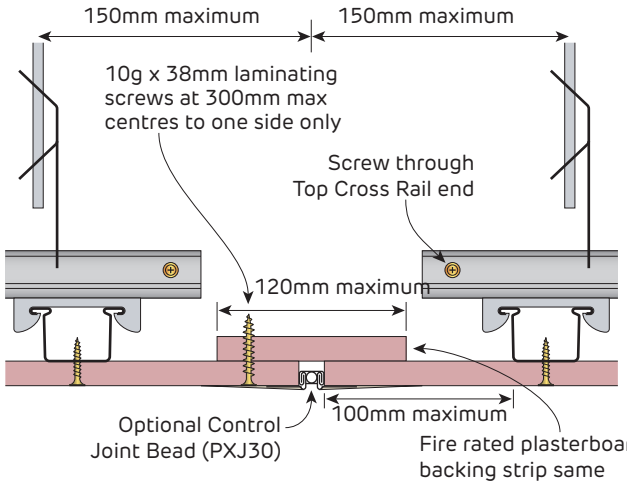


FIGURE 98 Seismic Control Joint
Parallel to furring channel
Section

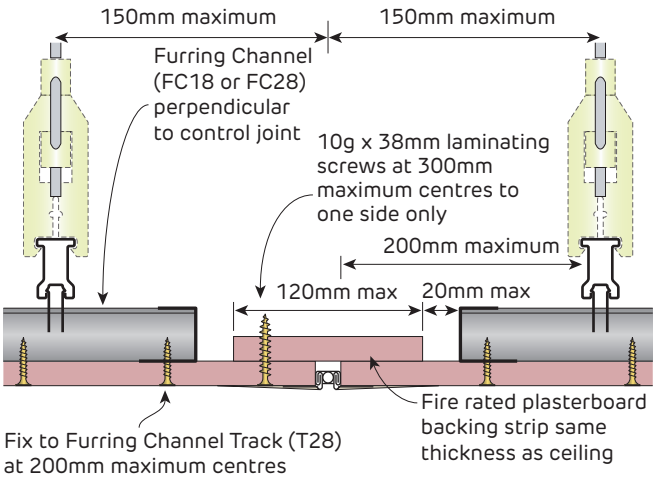


FIGURE 99 Seismic Control Joint
Perpendicular to furring channel
Section

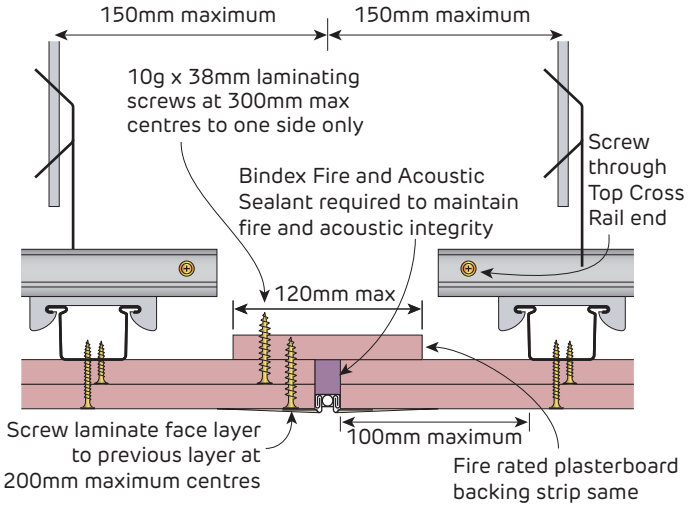


FIGURE 100 Seismic Control Joint
Parallel to furring channel
Section

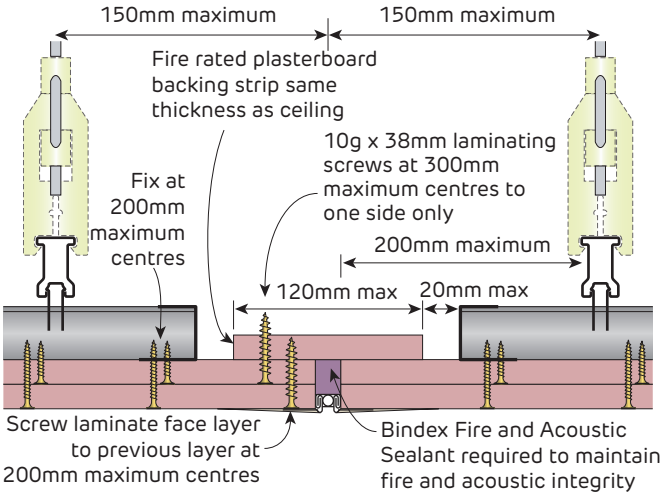


FIGURE 101 Seismic Control Joint
Perpendicular to furring channel
Section

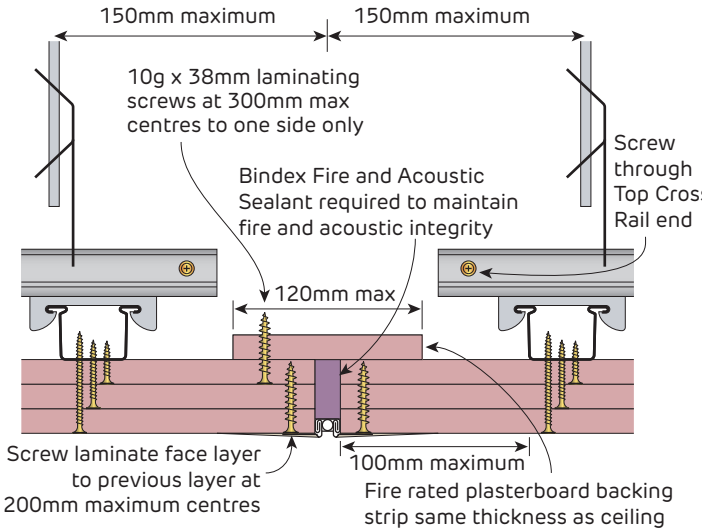


FIGURE 102 Seismic Control Joint
Parallel to furring channel
Section

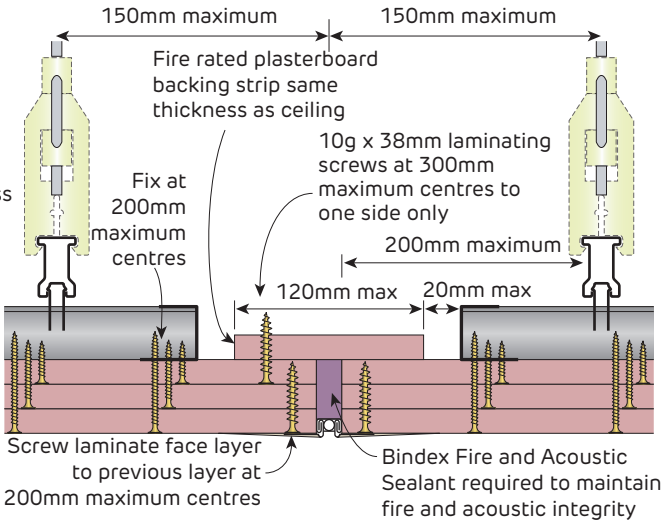


FIGURE 103 Seismic Control Joint
Perpendicular to furring channel
Section

Fire Rated

Suspended Ceiling Under a Fire Rated Ceiling

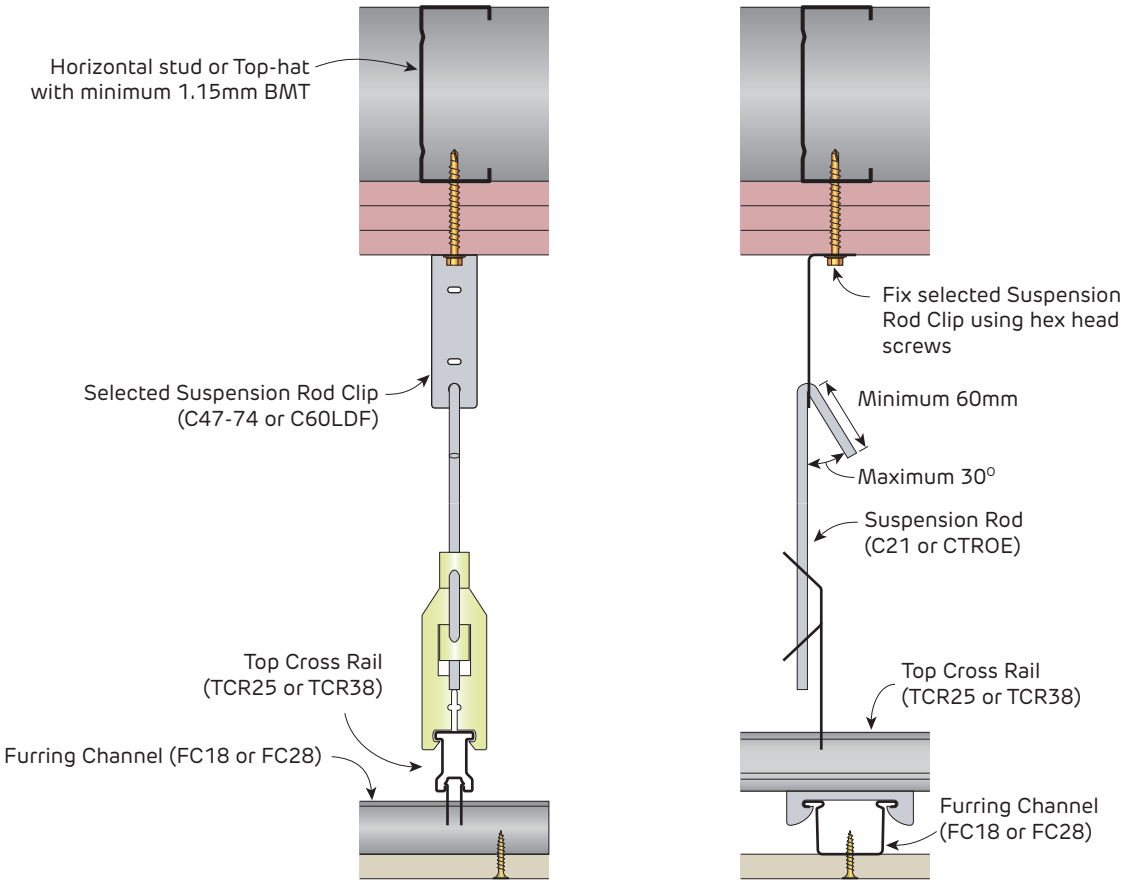


FIGURE 104 Suspended Ceiling under a Fire Rated Ceiling
Section

Non-Fire Rated

Top Cross Rail Bridging Under Point Load

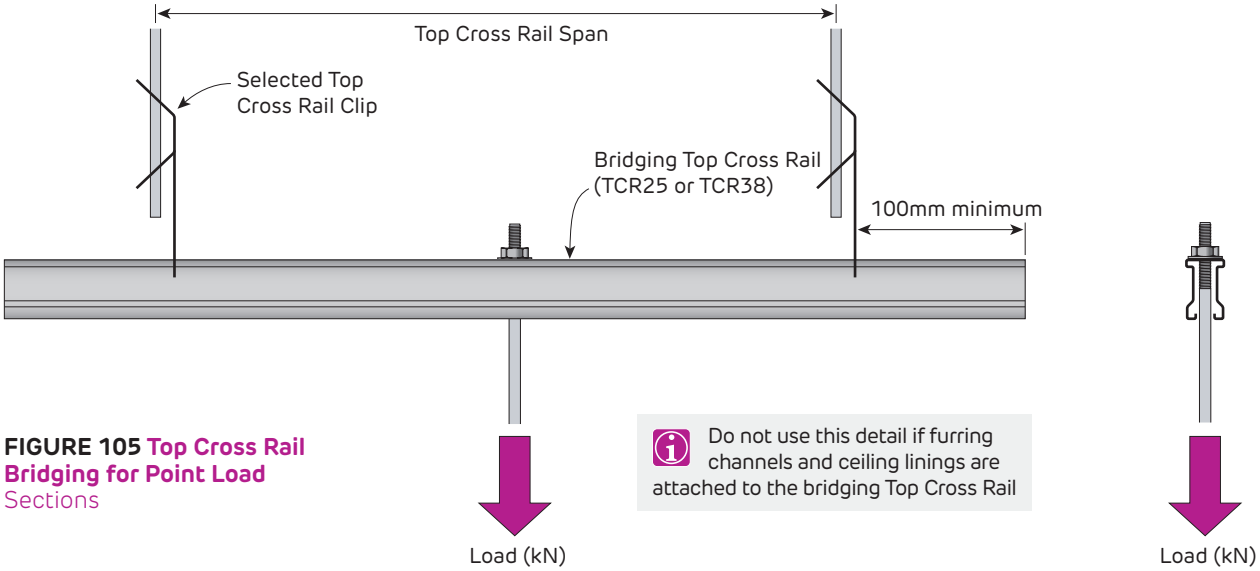


FIGURE 105 Top Cross Rail Bridging for Point Load
Sections

Do not use this detail if furring channels and ceiling linings are attached to the bridging Top Cross Rail

Top Cross Rail Bridging Table

TCR Span	Maximum Load (kg)	
	TCR25x0.75	TCR38x0.75
600mm	39	75
900mm	17	50
1200mm	10	28
1500mm	6	18
1800mm	-	12

1. Table based upon downward load, intended for internal use only.
2. Maximum load refers only to dead load (G). Other loads such as live, wind, service loads, etc are not included.
3. Table have not been checked for earthquake actions.
4. Table refer to Siniat Top Cross Rails of Base Metal Thickness (BMT) 0.75mm of grade G300 steel with Zincalume™ AM150 corrosion protection.
5. Calculations based upon a single span, and designed in accordance with *AS/NZS 4600:2018 Cold Formed Steel Structures*.
6. Connections to clips must be checked with the clip capacity table.
7. Ultimate Limit State Load Case 1: 1.4G
8. Serviceability Limit State Load Case 1: G, with deflection limited to Span/360
9. The project engineer must approve the nominated load and deflection limits are appropriate for a specific project.

Non-Fire Rated

Ceiling Perimeter Finishing Details

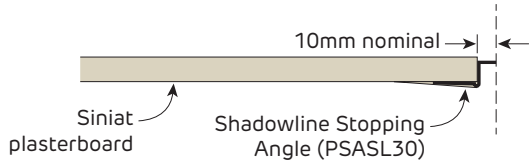


FIGURE 106 Finishing Detail - Shadowline
Section

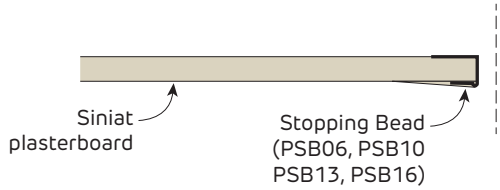


FIGURE 108 Finishing Detail - Stopping Bead
Section

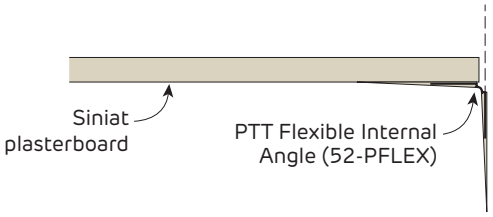


FIGURE 110 Finishing Detail - Flexible Square Set
Section

Gaps around the ceiling perimeter may reduce acoustic performance

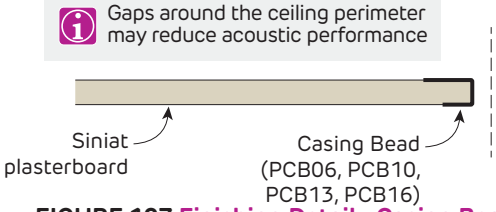


FIGURE 107 Finishing Detail - Casing Bead
Section

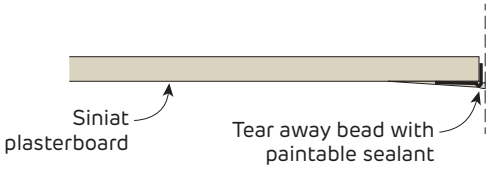


FIGURE 109 Finishing Detail - Square Set
Section

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

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

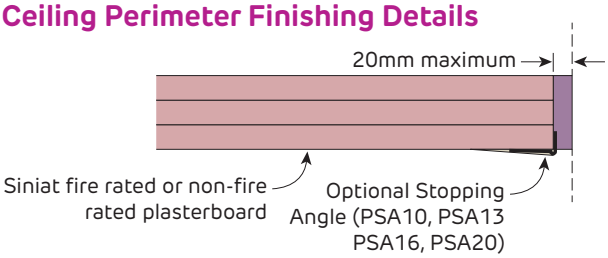


FIGURE 111 Finishing Detail - Stopping Angle
Valid for 1 to 4 layers
Section

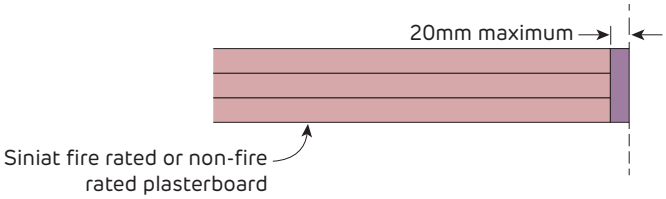


FIGURE 112 Finishing Detail - Bare finish with Sealant
Valid for 1 to 4 layers
Section

Not suitable for single layer ceiling

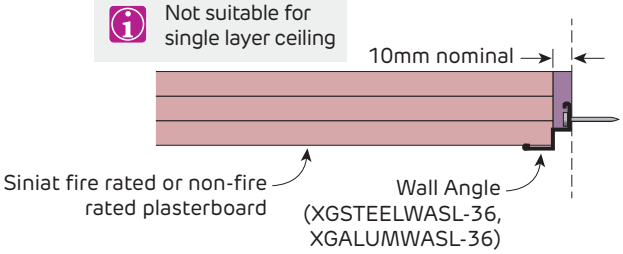


FIGURE 113 Finishing Detail - Shadowline Wall Angle
Valid for 2 to 4 layers only
Section

Not suitable for single layer ceiling

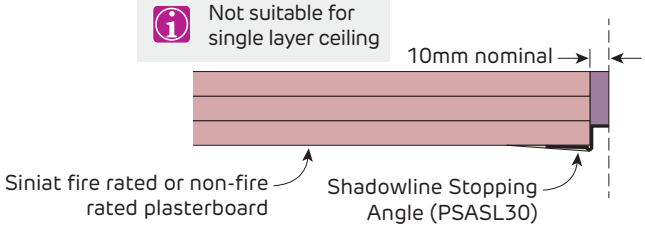


FIGURE 114 Finishing Detail - Shadowline
Valid for 2 to 4 layers only
Section

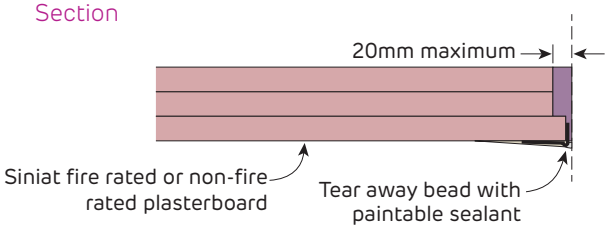


FIGURE 115 Finishing Detail - Square Set
Valid for 1 to 4 layers
Section

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

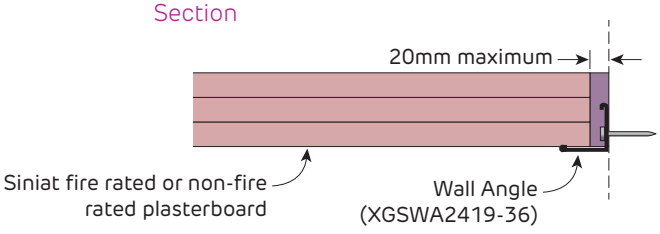


FIGURE 116 Finishing Detail - Wall Angle
Valid for 1 to 4 layers
Section

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

Fire Rated
Fire Penetration Details

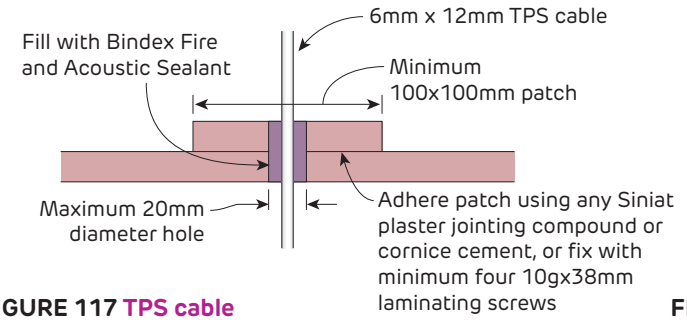


FIGURE 117 TPS cable
Maintains FRL of ceiling under floor/roof systems
Patch above ceiling lining
Valid for 1 layer systems only - Section

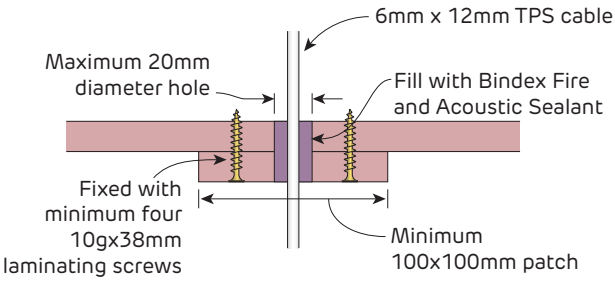


FIGURE 118 TPS cable
Maintains FRL of ceiling under floor/roof systems
Patch below ceiling lining
Valid for 1 layer systems only - Section

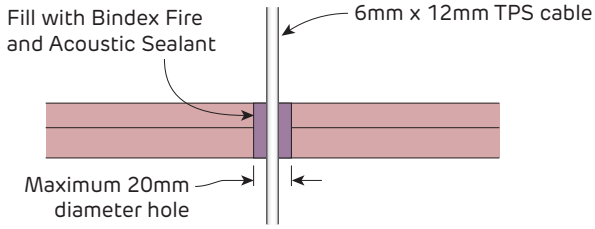


FIGURE 119 TPS cable
Maintains FRL and RISF of ceiling under floor/roof systems
Valid for 2 to 3 layers only
Section

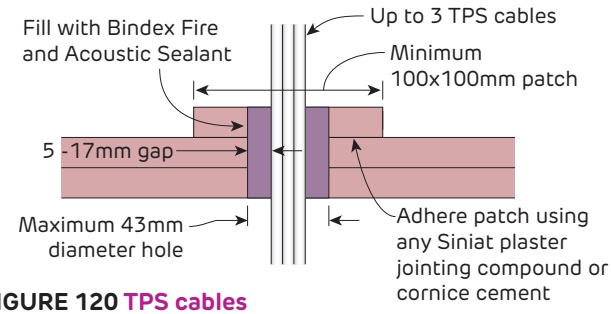


FIGURE 120 TPS cables
Maintains FRL of ceiling under floor/roof systems
Patch above ceiling lining
Valid for 2 layers only - Section

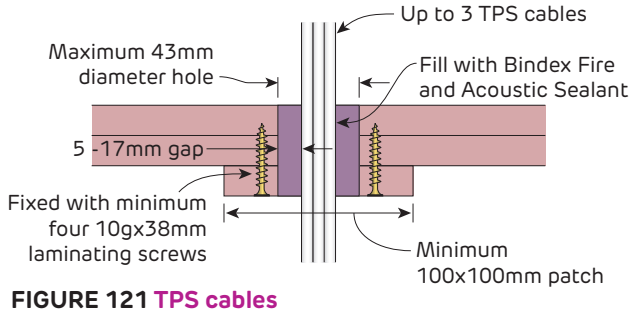


FIGURE 121 TPS cables
Maintains FRL of ceiling under floor/roof systems
Patch below ceiling lining
Valid for 2 layers only - Section

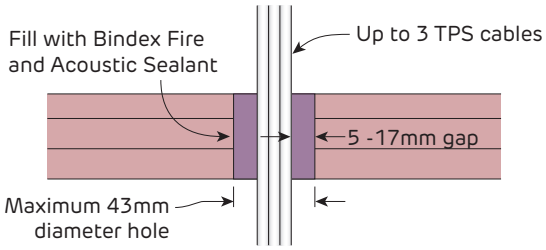


FIGURE 122 TPS cables
Maintains FRL of ceiling under floor/roof systems
Valid for 3 layers only
Section

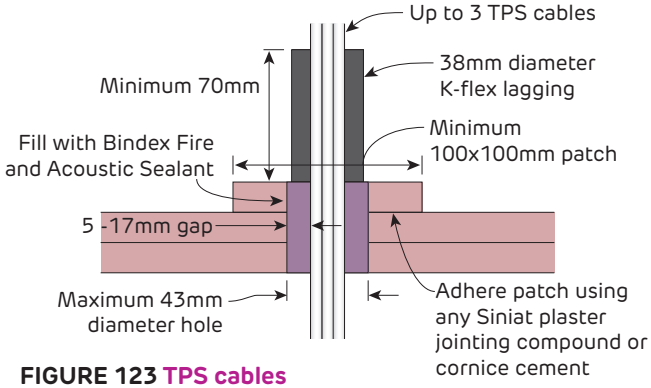


FIGURE 123 TPS cables
Maintains RISF and FRL of ceiling under floor/roof systems
Patch above ceiling lining
Valid for 2 layers only - Section

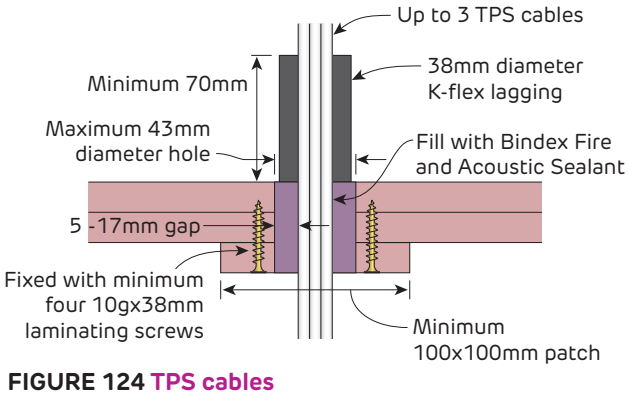


FIGURE 124 TPS cables
Maintains RISF and FRL of ceiling under floor/roof systems
Patch below ceiling lining
Valid for 2 layers only - Section

Fire Rated
Fire Penetration Details

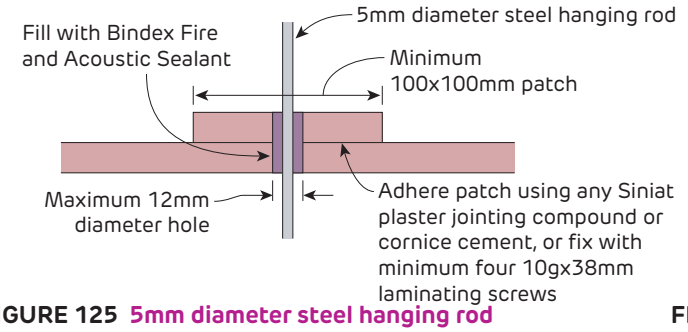


FIGURE 125 **5mm diameter steel hanging rod**
Maintains FRL of ceiling under floor/roof systems
Patch above ceiling lining
Valid for 1 layer systems only - Section

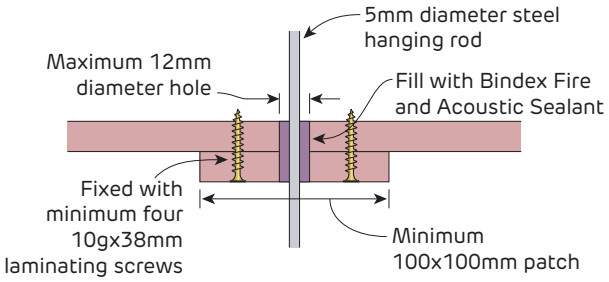


FIGURE 126 **5mm diameter steel hanging rod**
Maintains FRL of ceiling under floor/roof systems
Patch below ceiling lining
Valid for 1 layer systems only - Section

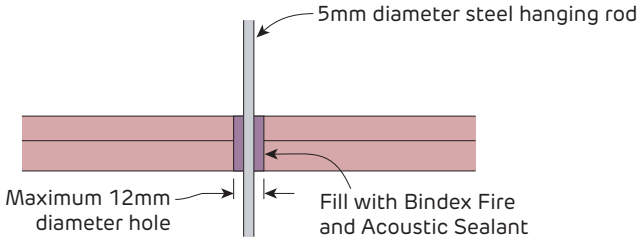


FIGURE 127 **5mm diameter steel hanging rod**
Maintains FRL of ceiling under floor/roof systems
Valid for 2 to 3 layers only
Section

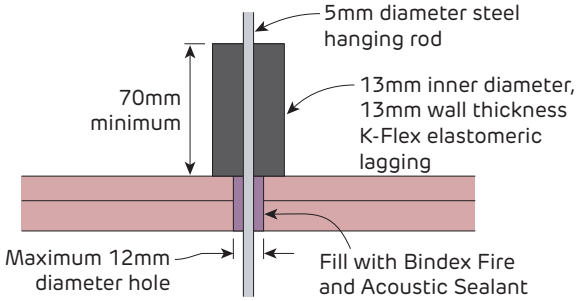


FIGURE 128 **5mm diameter steel hanging rod**
Maintains RISF and FRL of ceiling under floor/roof systems
Valid for 2 to 3 layers only
Section

Fire Rated
Fire Penetration Details

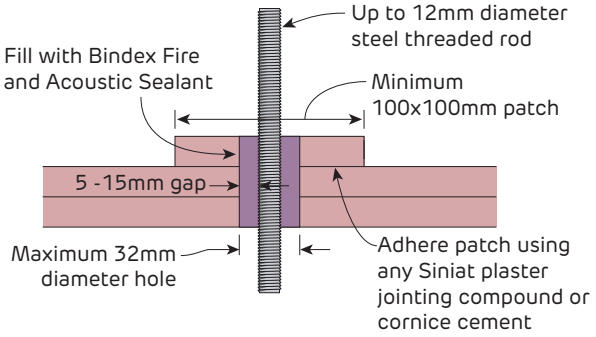


FIGURE 129 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of ceiling under floor/roof systems
Patch above ceiling lining
Valid for 2 layers only - Section

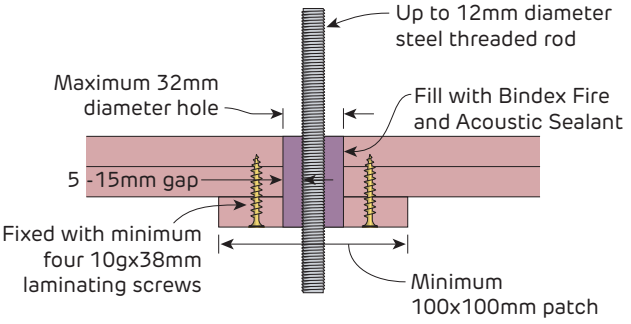


FIGURE 130 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of ceiling under floor/roof systems
Patch below ceiling lining
Valid for 2 layers only - Section

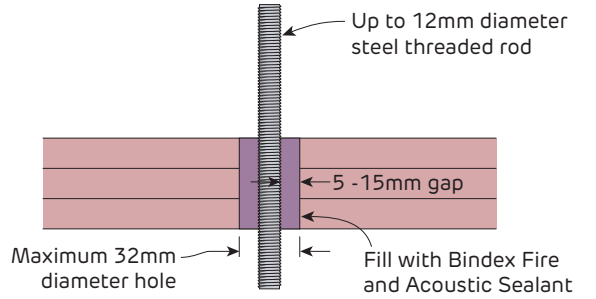


FIGURE 131 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of ceiling under floor/roof systems
Valid for 3 layers only
Section

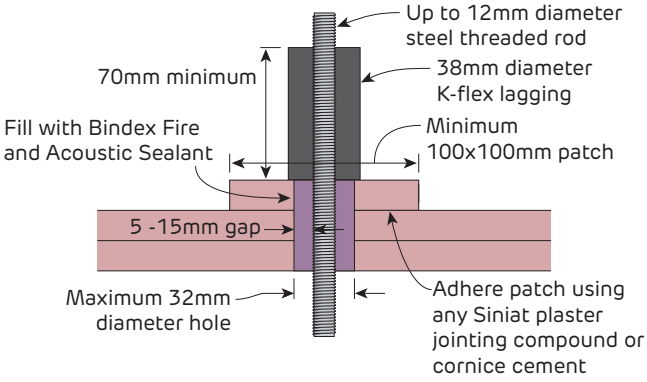


FIGURE 132 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of Universal Ceiling Systems
Patch above ceiling lining
Valid for 2 layers only - Section

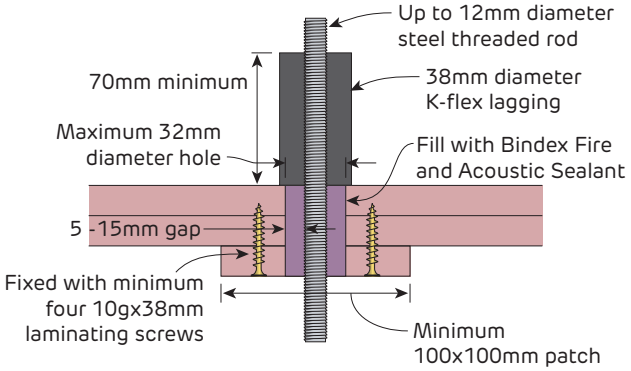


FIGURE 133 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of Universal Ceiling Systems
Patch below ceiling lining
Valid for 2 layers only - Section

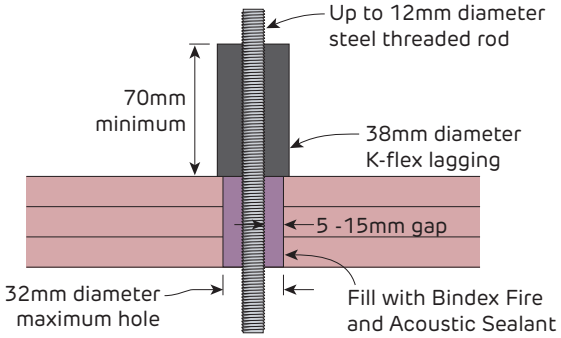
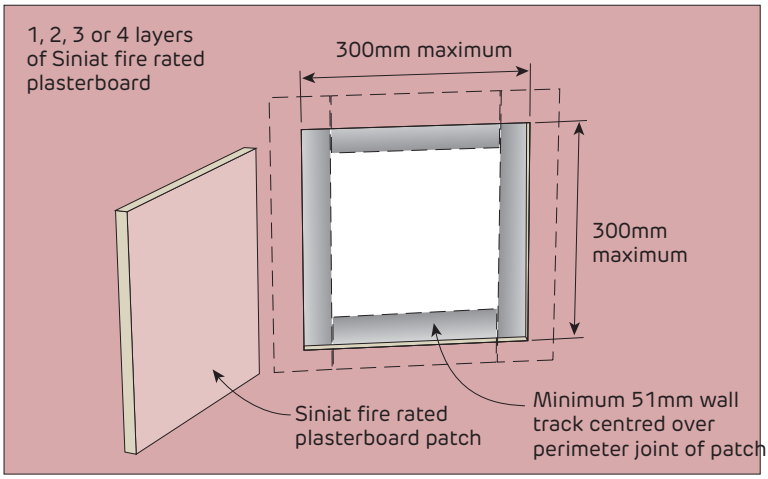


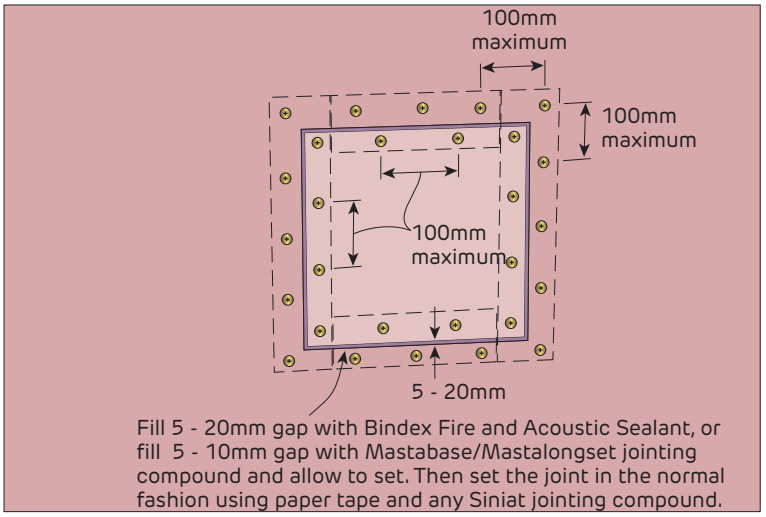
FIGURE 134 Up to 12mm steel diameter threaded rod
Maintains RISF and FRL of Universal Ceiling Systems
Valid for 3 to 4 layers only
Section

Fire Rated

Flush Patching of Fire Rated Ceiling Systems - Maximum 300x300mm Opening



Step 1



Step 2

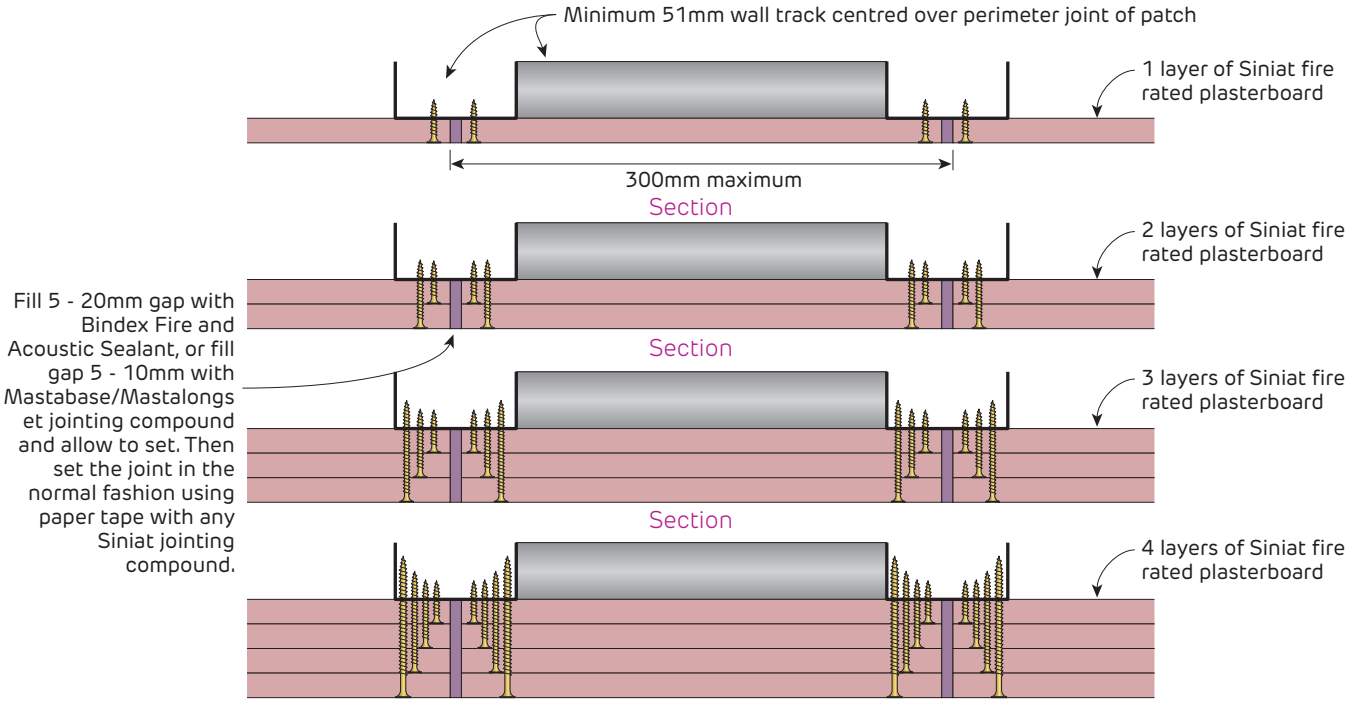
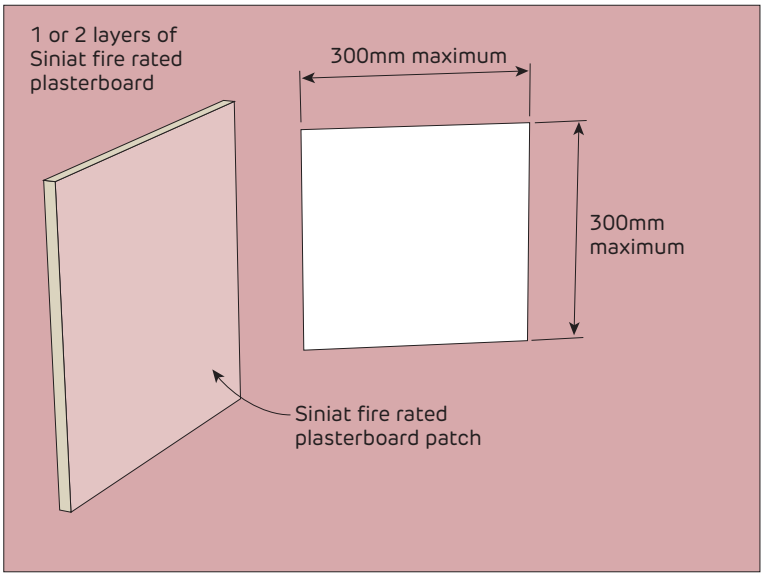


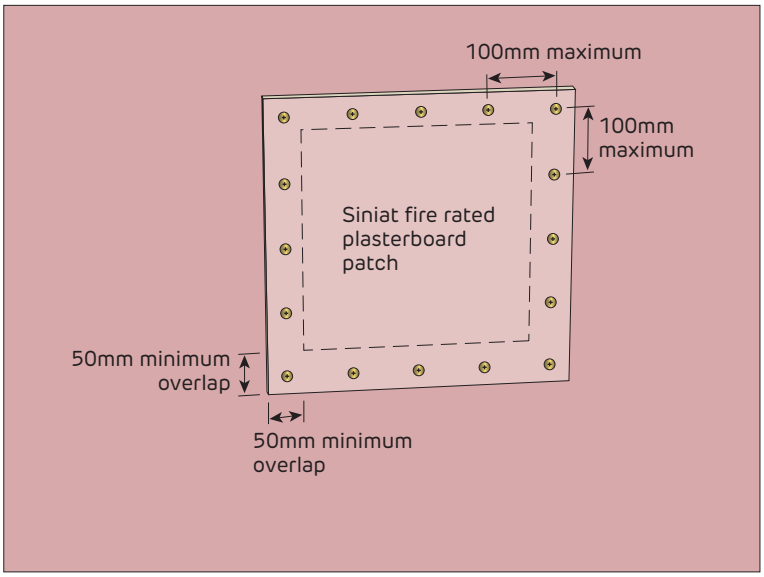
FIGURE 135 Flush patch
Maximum 300x300mm opening
Maintains FRL of system

Fire Rated

Proud Patching of Fire Rated Ceiling Systems - Maximum 300x300mm Opening

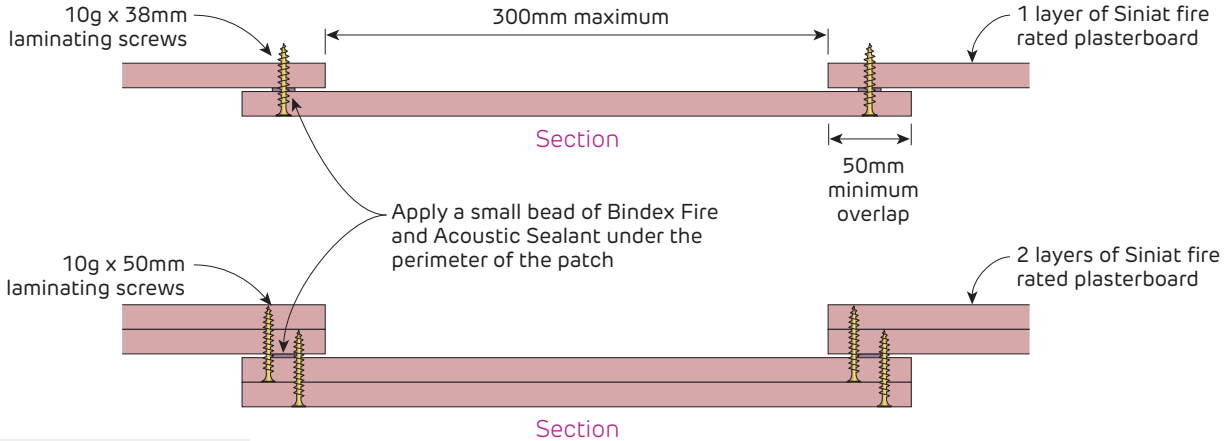


Step 1



Step 2

Fire rated plasterboard patch must be the same thickness and number of layers as the base fire rated system

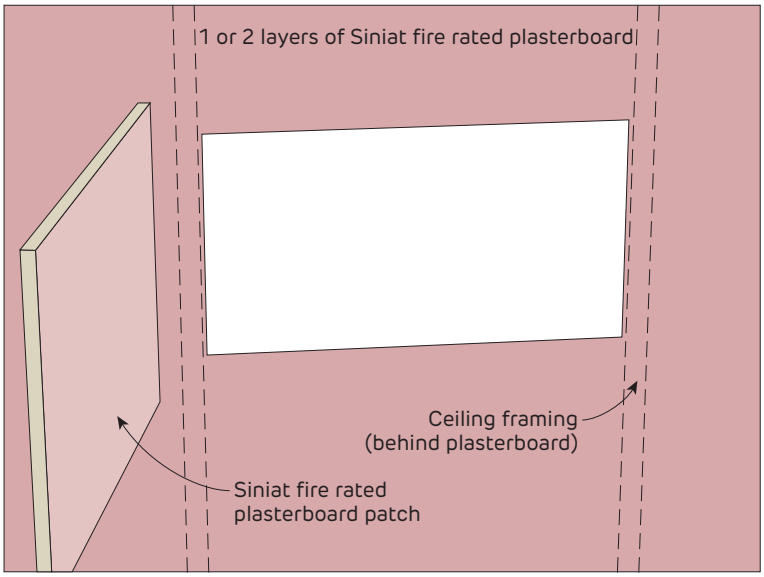


Fill any gaps with Bindex Fire and Acoustic sealant to maintain integrity

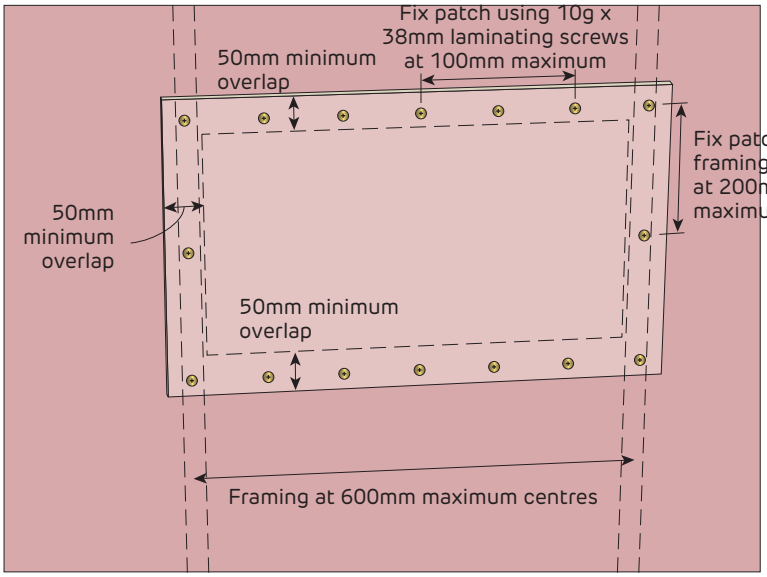
FIGURE 136 Proud patch
Maximum 300x300mm opening

Fire Rated

Proud Patching of Fire Rated Ceiling Systems - Larger Openings



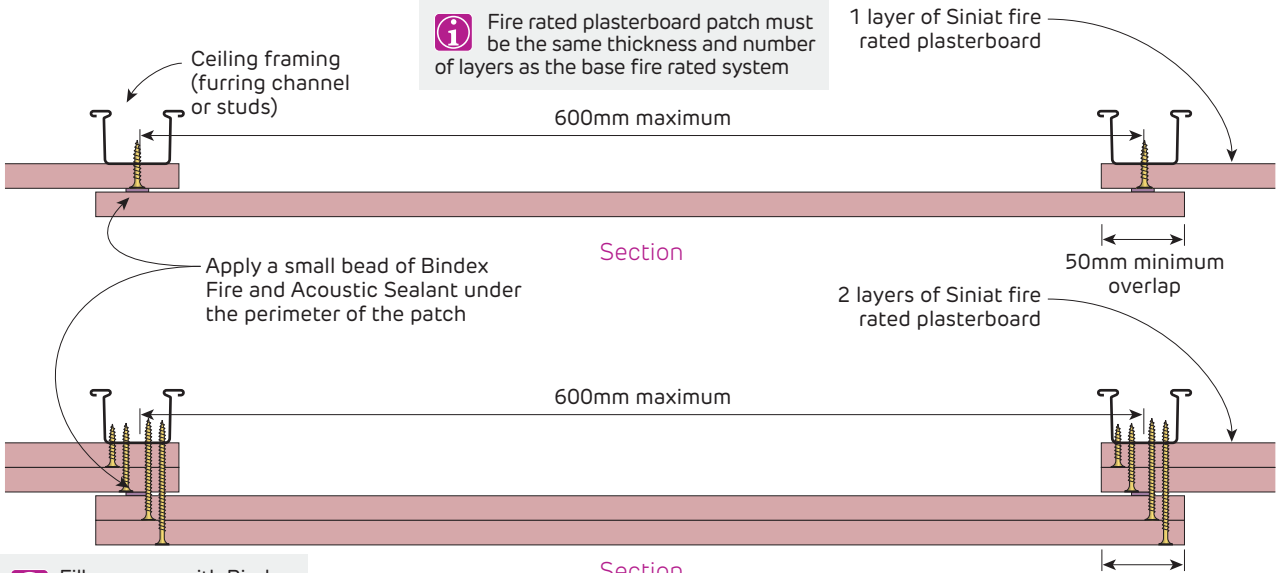
Step 1



Step 2

To repair a fire rated ceiling with holes larger than 300mm x 300mm and achieve a flush finish; follow the normal installation instructions to re-instate the system.

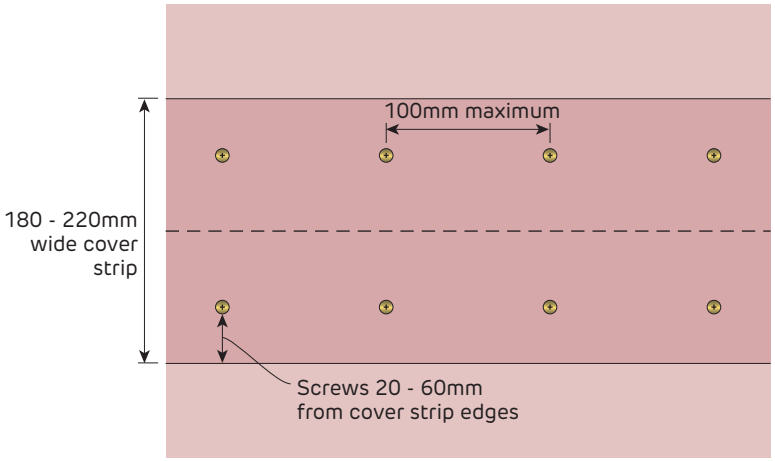
Fire rated plasterboard patch must be the same thickness and number of layers as the base fire rated system



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

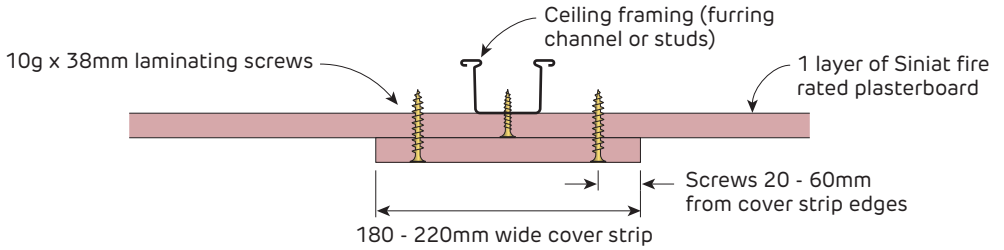
FIGURE 137 Proud patch for larger openings
For openings larger than 300x300mm

Fire Rated
Patching of Fire Rated Ceiling Systems

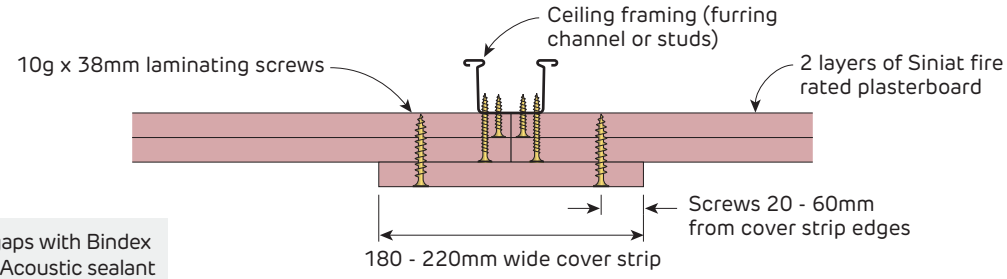


Ceiling Joint

Cover strip over a fire rated plasterboard joint can compensate for:
- Joints not staggered in accordance with Siniat Technical Literature
- Use of fibre glass tape
- Incorrect jointing or no jointing material used.



Plan



Plan

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

FIGURE 138 Cover Strip