



5.2 Ceiling Attenuation Class Systems

Ceiling Attenuation Class (CAC) ceiling systems display resistance to sound passing up and over a wall. The sound insulation rating given for the ceiling system indicates the sound reduction from one room to the next via the two ceilings and the above-ceiling plenum.

Rather than introduce another term to building designers such as CAC, the more familiar terms R_w and $R_w + C_{tr}$ are used. CAC systems without a central barrier must have a maximum of 1 downlight every 5 m² and other penetrations acoustically treated in the rooms adjacent to the wall are required to maintain sound insulation performance.

Refer to Section 5.1 for ceiling to wall finishing details.



CAC1 - CAC28

[Option 1] Suspended ceiling frame with set plasterboard ceiling

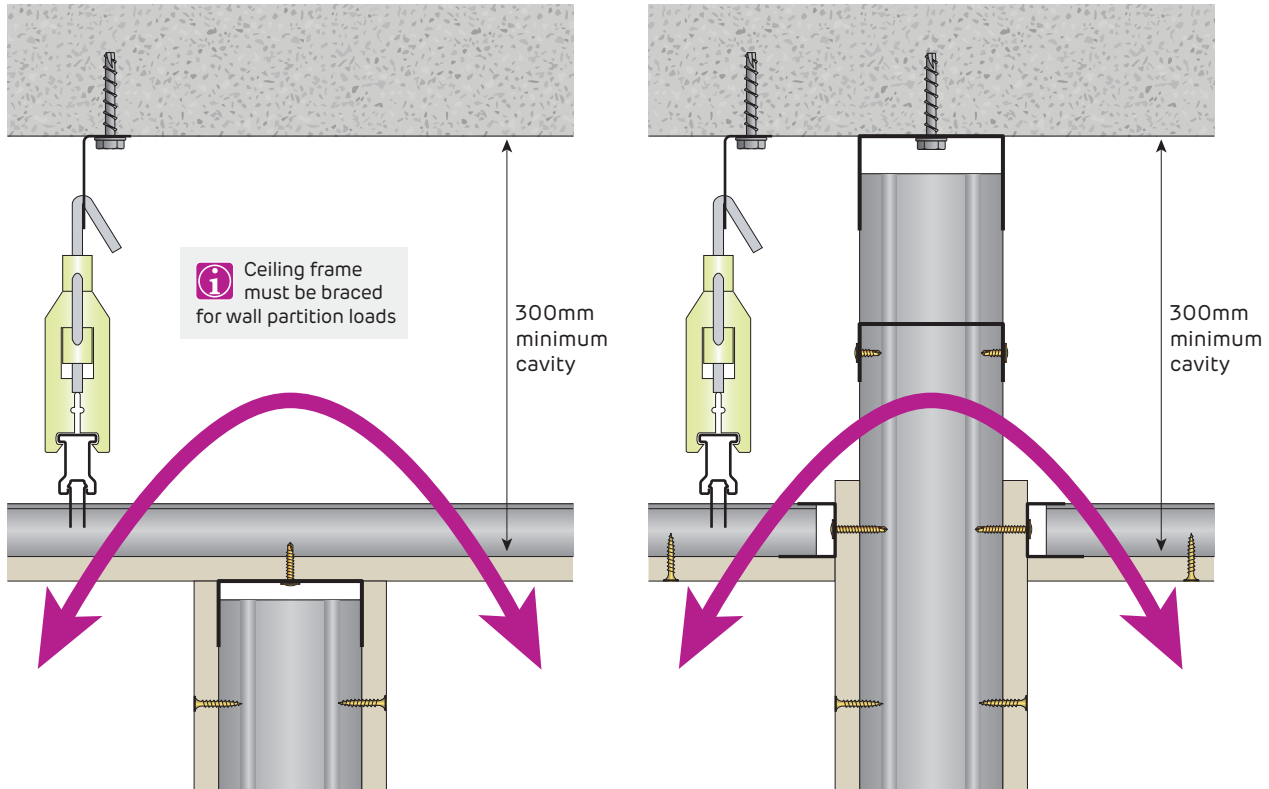
[Option 2] Suspended T-bar exposed grid frame with ceiling tiles for system CAC1

[All systems are suitable under a concrete slab, timber roof framing or steel roof framing]

[Sound insulation numbers based on minimum 300mm cavity]

[Penetrations in ceiling lining may degrade sound insulation performance]

[Wall to have equal or higher sound insulation rating than CAC ceiling]

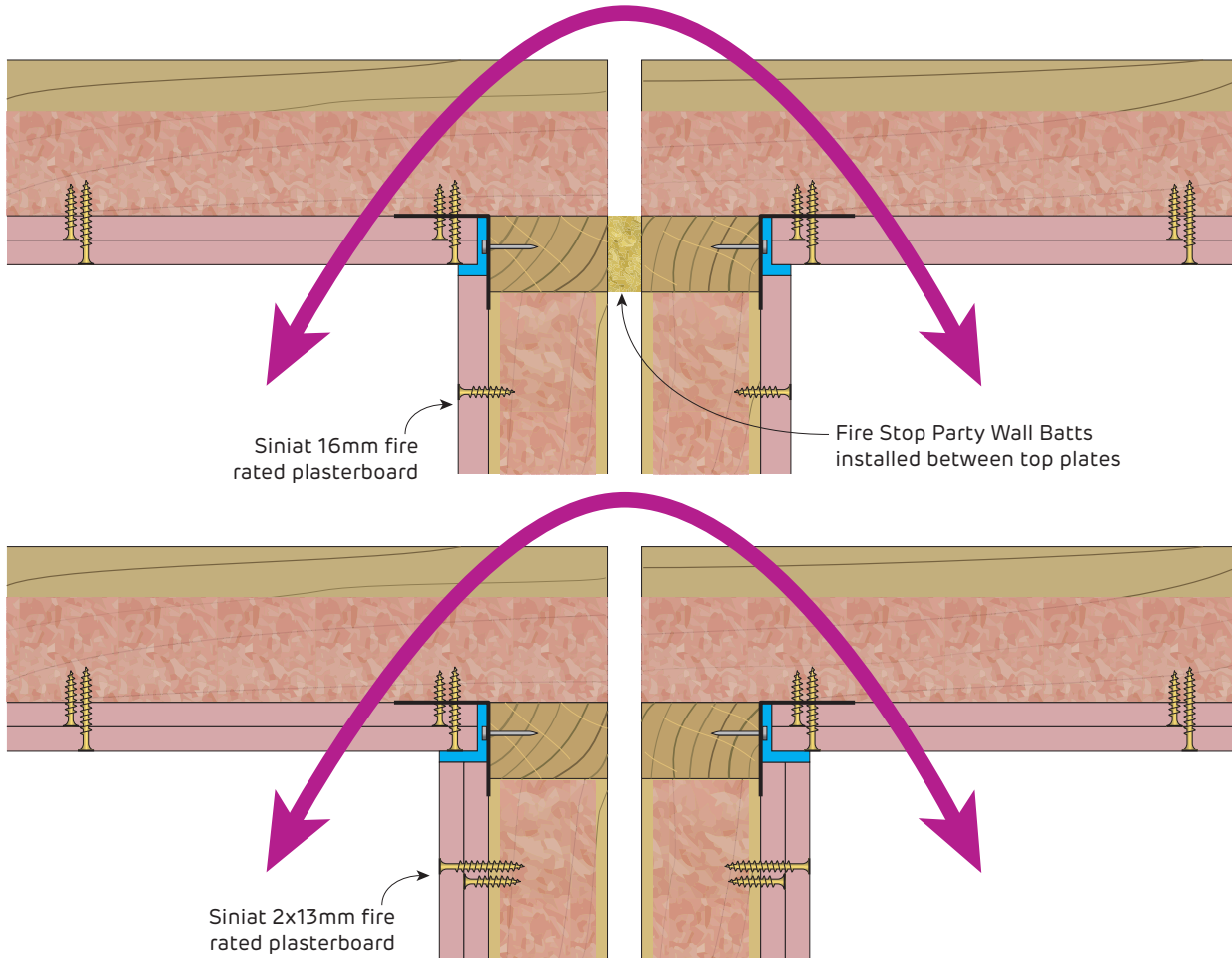


| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | | | Report Day Design 4738-5 |
|--------|--|--|---|---|-----------------------------------|
| | | No Insulation | Pink® Partition 50mm 11 kg/m ³ R1.2 insulation above ceiling to 1200mm both sides of wall | Pink® Partition 50mm 11 kg/m ³ R1.2 insulation over entire ceiling | |
| CAC1 | 10mm spangrid ceiling tiles in exposed grid | 36 (30) | 41 (35) | 43 (37) | |
| CAC10 | 1 layer of 10mm mastashield or spanshield | 38 (32) | 43 (36) | 45 (38) | |
| CAC11 | 2 layers of 10mm mastashield or spanshield | 43 (37) | 47 (41) | 48 (42) | |
| CAC14 | 1 layer of 13mm mastashield | 41 (34) | 45 (38) | 47 (40) | |
| CAC16 | 1 layer of 10mm soundshield or opal | 41 (34) | 45 (38) | 47 (40) | |
| CAC17 | 2 layers of 10mm soundshield or opal | 44 (38) | 48 (42) | 49 (43) | |
| CAC18 | 1 layer of 13mm soundshield | 43 (36) | 47 (40) | 48 (41) | |
| CAC19 | 2 layers of 13mm soundshield | 49 (42) | 52 (45) | 52 (45) | |
| CAC20 | 1 layer of 13mm fireshield | 43 (36) | 47 (40) | 48 (41) | |
| CAC22 | 1 layer of 16mm fireshield | 43 (36) | 47 (40) | 48 (41) | |
| CAC23 | 1 layer of 13mm fireshield plus 1 layer of 16mm fireshield | 49 (42) | 52 (45) | 52 (45) | |
| CAC24 | 2 layers of 16mm fireshield | 49 (42) | 52 (45) | 52 (45) | |
| CAC26 | 3 layers of 13mm fireshield | 51 (44) | 53 (46) | 53 (46) | |
| CAC27 | 1 layer of 13mm fireshield plus 2 layers of 16mm fireshield | 51 (44) | 53 (46) | 53 (46) | |
| CAC28 | 3 layers of 16mm fireshield | 51 (44) | 53 (46) | 53 (46) | |

For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.

CAC120 - CAC128

- Set plasterboard ceiling divided by discontinuous wall frames and discontinuous timber or steel joists or trusses
- [Maintains RISF 60 when using an RISF 60 minute ceiling]
 [Double stud wall timber or steel frame with minimum 20mm air-gap]
 [All systems are suitable under roof or floor with timber or steel framing]
 [Sound insulation numbers based on minimum 300mm cavity]
 [Penetrations in ceiling lining may degrade sound insulation performance]
 [Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | | | |
|--------|--|--|--|---|--------------------------------|
| | | No Insulation | Pink® Partition 50mm 11 kg/m ³ R1.2 insulation above ceiling to 1200mm both sides of wall | Pink® Partition 50mm 11 kg/m ³ R1.2 insulation over entire ceiling | |
| CAC120 | 1 layer of 13mm fireshield | 49 (43) | 54 (46) | 56 (48) | Report Day Design 4738-5 |
| CAC121 | 2 layers of 13mm fireshield | 52 (45) | 58 (58) | 59 (50) | |
| CAC122 | 1 layer of 16mm fireshield | 42 (43) | 55 (46) | 56 (48) | |
| CAC123 | 1 layer of 13mm fireshield plus 1 layer of 16mm fireshield | 52 (45) | 58 (48) | 59 (50) | |
| CAC124 | 2 layers of 16mm fireshield | 52 (45) | 58 (48) | 59 (50) | |
| CAC126 | 3 layers of 13mm fireshield | 51 (46) | 59 (49) | 60 (50) | |
| CAC127 | 1 layer of 13mm fireshield plus 2 layers of 16mm fireshield | 56 (47) | 59 (50) | 60 (50) | |
| CAC128 | 3 layers of 16mm fireshield | 56 (48) | 59 (51) | 60 (50) | |

For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.



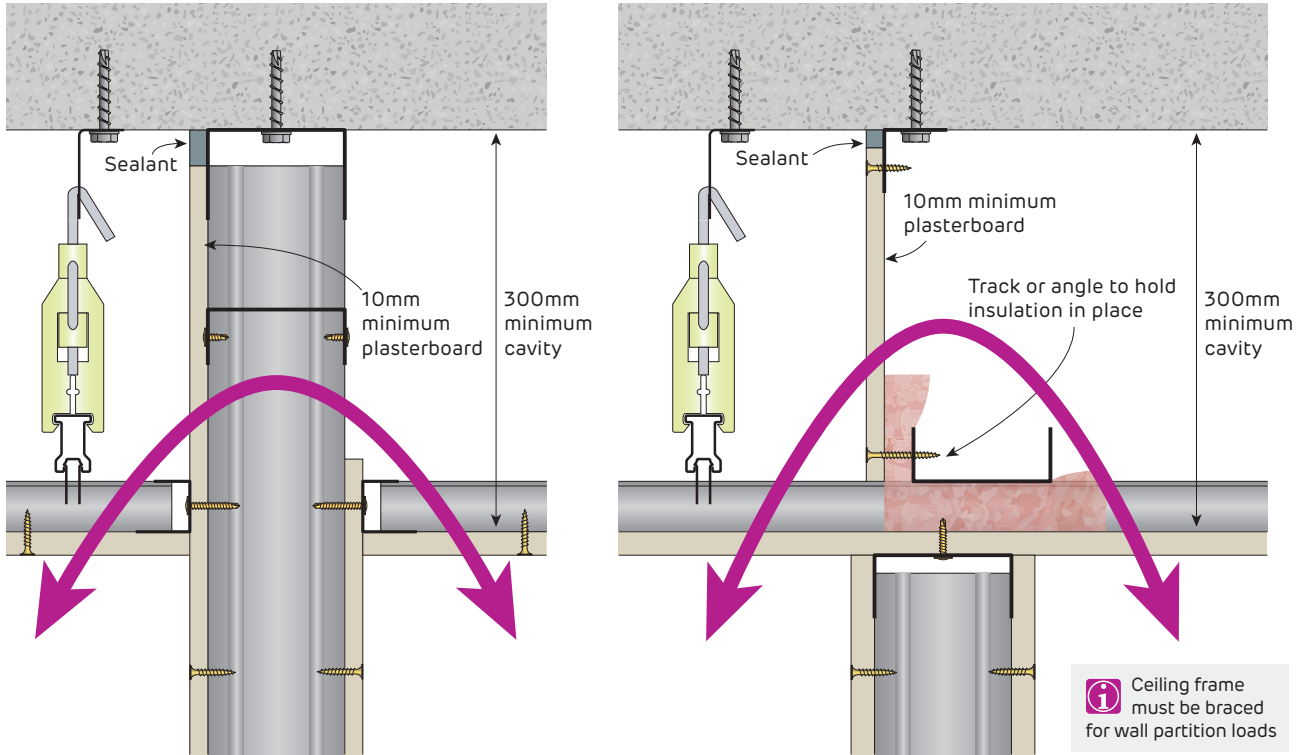
CAC3 - CAC48

- [Ceiling Option 1] Suspended ceiling frame with set plasterboard ceiling
[Ceiling Option 2] Suspended T-bar exposed grid frame with ceiling tiles for system CAC3
- [Above Ceiling Option 1] 10mm minimum plasterboard on one side of stud only, continued up to concrete slab or roof lining [Above Ceiling Option 2] 10mm minimum plasterboard fixed to concrete slab or roof lining with track or angle. Insulation placed above ceiling lining and held in place using track or angle.

[All systems are suitable under a concrete slab, timber roof framing or steel roof framing]

[Sound insulation numbers based on minimum 300mm cavity]

[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | | | Report Day Design 4738-5 |
|--------|--|--|--|---|-----------------------------------|
| | | No Insulation | Pink® Partition 50mm 11 kg/m³ R1.2 insulation above ceiling to 1200mm both sides of wall | Pink® Partition 50mm 11 kg/m³ R1.2 insulation over entire ceiling | |
| CAC3 | 10mm spangrid ceiling tiles in exposed grid | 41 (35) | 46 (40) | 48 (42) | |
| CAC30 | 1 layer of 10mm mastashield or spanshield | 45 (37) | 50 (42) | 52 (44) | |
| CAC31 | 2 layers of 10mm mastashield or spanshield | 51 (41) | 54 (44) | 56 (46) | |
| CAC34 | 1 layer of 13mm mastashield | 47 (37) | 52 (42) | 54 (44) | |
| CAC36 | 1 layer of 10mm soundshield or opal | 48 (38) | 52 (42) | 54 (44) | |
| CAC37 | 2 layers of 10mm soundshield or opal | 52 (42) | 55 (45) | 57 (47) | |
| CAC38 | 1 layer of 13mm soundshield | 49 (39) | 53 (43) | 55 (45) | |
| CAC39 | 2 layers of 13mm soundshield | 53 (43) | 56 (46) | 57 (47) | |
| CAC40 | 1 layer of 13mm fireshield | 49 (39) | 53 (43) | 55 (45) | |
| CAC42 | 1 layer of 16mm fireshield | 50 (40) | 54 (44) | 56 (46) | |
| CAC43 | 1 layer of 13mm fireshield plus 1 layer of 16mm fireshield | 53 (43) | 56 (46) | 57 (47) | |
| CAC44 | 2 layers of 16mm fireshield | 53 (43) | 56 (46) | 57 (47) | |
| CAC46 | 3 layers of 13mm fireshield | 55 (45) | 57 (47) | 58 (48) | |
| CAC47 | 1 layer of 13mm fireshield plus 2 layers of 16mm fireshield | 55 (45) | 57 (47) | 58 (48) | |
| CAC48 | 3 layers of 16mm fireshield | 55 (45) | 57 (47) | 58 (48) | |

For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.

CAC5 - CAC68

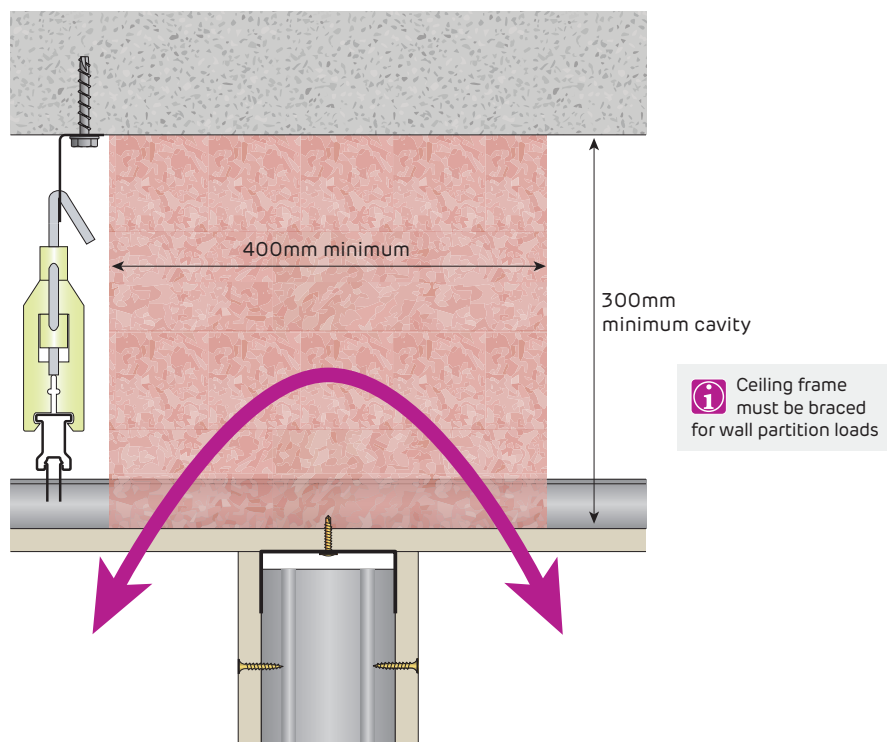
- [Ceiling Option 1] Suspended ceiling frame with set plasterboard ceiling
 [Ceiling Option 2] Suspended T-bar exposed grid frame with ceiling tiles for system CAC5
- [Above Ceiling] Pink® Partition 50mm 14 kg/m³ R1.3 insulation baffle in 400mm wide strips to extend from ceiling to concrete slab or roof lining with no gaps or holes.

[All systems are suitable under a concrete slab, timber roof framing or steel roof framing]

[Sound insulation numbers based on minimum 300mm cavity]

[Penetrations in ceiling lining may degrade sound insulation performance]

[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | |
|--------|--|--|--------------------------------|
| | | Pink® Partition 50mm 14 kg/m ³ R1.3 insulation above ceiling lining in 400mm minimum wide strips continued up to concrete slab or roof lining | |
| CAC5 | 10mm spangrid ceiling tiles in exposed grid | 43 (36) | Report Day Design 4738-5 |
| CAC50 | 1 layer of 10mm mastashield or spanshield | 45 (38) | |
| CAC51 | 2 layers of 10mm mastashield or spanshield | 52 (42) | |
| CAC54 | 1 layer of 13mm mastashield | 50 (40) | |
| CAC56 | 1 layer of 10mm soundshield or opal | 50 (40) | |
| CAC57 | 2 layers of 10mm soundshield or opal | 53 (43) | |
| CAC58 | 1 layer of 13mm soundshield | 51 (41) | |
| CAC59 | 2 layers of 13mm soundshield | 53 (43) | |
| CAC60 | 1 layer of 13mm fireshield | 51 (41) | |
| CAC62 | 1 layer of 16mm fireshield | 51 (41) | |
| CAC63 | 1 layer of 13mm fireshield plus 1 layer of 16mm fireshield | 53 (43) | |
| CAC64 | 2 layers of 16mm fireshield | 53 (43) | |
| CAC66 | 3 layers of 13mm fireshield | 54 (44) | |
| CAC67 | 1 layer of 13mm fireshield plus 2 layers of 16mm fireshield | 54 (44) | |
| CAC68 | 3 layers of 16mm fireshield | 54 (44) | |

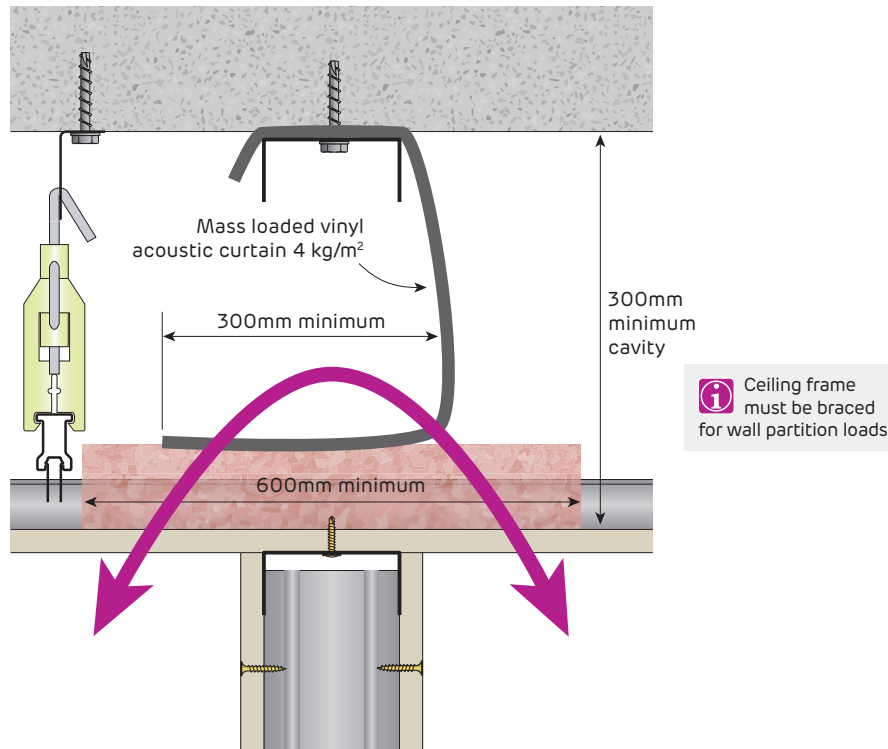
For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.



CAC7 - CAC88

- [Ceiling Option 1] Suspended ceiling frame with set plasterboard ceiling
[Ceiling Option 2] Suspended T-bar exposed grid frame with ceiling tiles for system CAC7
- [Above Ceiling] Quadzero™ Loaded Vinyl Barrier 4 kg/m² above wall to extend from ceiling to concrete slab or roof with no gaps or holes. Pink® Partition 50mm 11 kg/m³ R1.2 insulation placed above ceiling lining.

[All systems are suitable under a concrete slab, timber roof framing or steel roof framing]
[Sound insulation numbers based on minimum 300mm cavity]
[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | |
|--------|--|--|---------------------------------|
| | | Quadzero™ Loaded Vinyl Barrier 4 kg/m ² with Pink® Partition 50mm 11 kg/m ³ R1.2 insulation above ceiling lining in a 600mm minimum wide strip | |
| CAC7 | 10mm spangrid ceiling tiles in exposed grid | 44 (38) | Report Day Design 3094-40 |
| CAC70 | 1 layer of 10mm mastashield or spanshield | 47 (40) | |
| CAC71 | 2 layers of 10mm mastashield or spanshield | 52 (42) | |
| CAC74 | 1 layer of 13mm mastashield | 50 (40) | |
| CAC76 | 1 layer of 10mm soundshield or opal | 50 (40) | |
| CAC77 | 2 layers of 10mm soundshield or opal | 53 (43) | |
| CAC78 | 1 layer of 13mm soundshield | 51 (41) | |
| CAC79 | 2 layers of 13mm soundshield | 54 (44) | |
| CAC80 | 1 layer of 13mm fireshield | 51 (41) | |
| CAC82 | 1 layer of 16mm fireshield | 52 (42) | |
| CAC83 | 1 layer of 13mm fireshield plus 1 layer of 16mm fireshield | 54 (44) | |
| CAC84 | 2 layers of 16mm fireshield | 54 (44) | |
| CAC86 | 3 layers of 13mm fireshield | 55 (45) | |
| CAC87 | 1 layer of 13mm fireshield plus 2 layers of 16mm fireshield | 55 (45) | |
| CAC88 | 3 layers of 16mm fireshield | 55 (45) | |

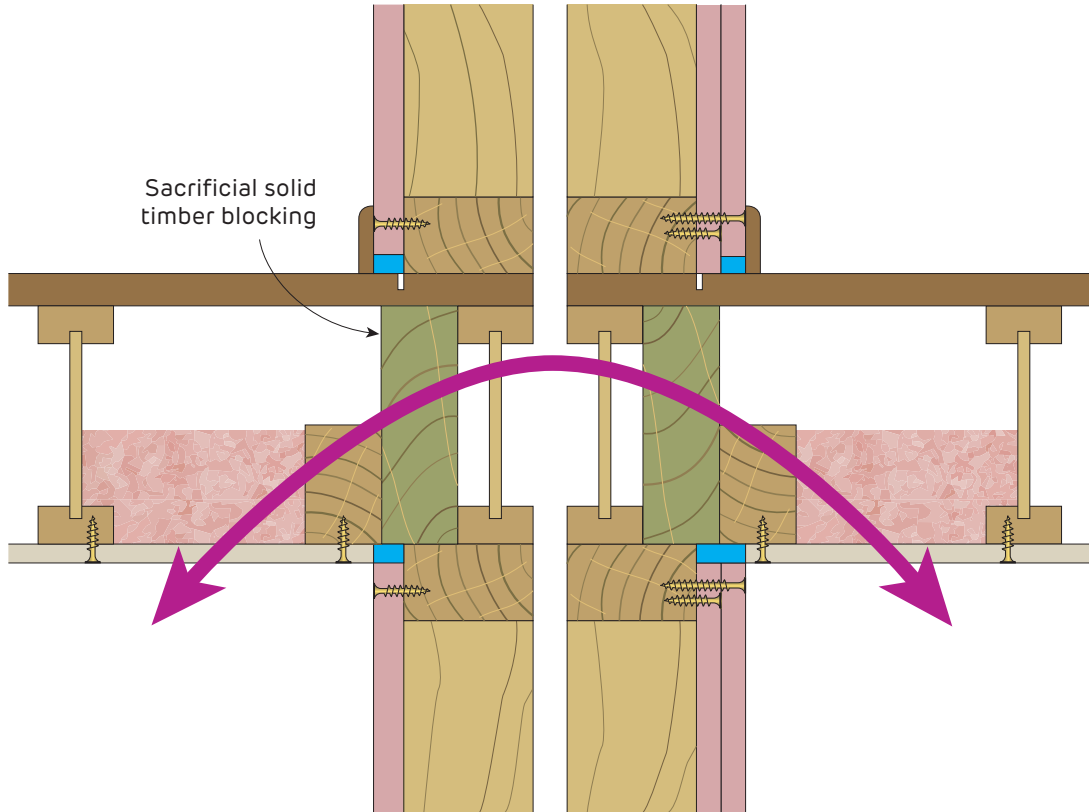
For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.



CAC130

- Minimum 10mm plasterboard ceiling divided by discontinuous wall frames and discontinuous joists

[Sound insulation numbers based on minimum 300mm cavity]



| System | Ceiling Lining | Airborne Sound Insulation R _w (R _w + C _{tr}) | | |
|--------|---|---|---------|------------------|
| | | | | No Insulation |
| CAC130 | 1 layer of 10mm mastashield or spanshield | 60 (50) | 64 (54) | |

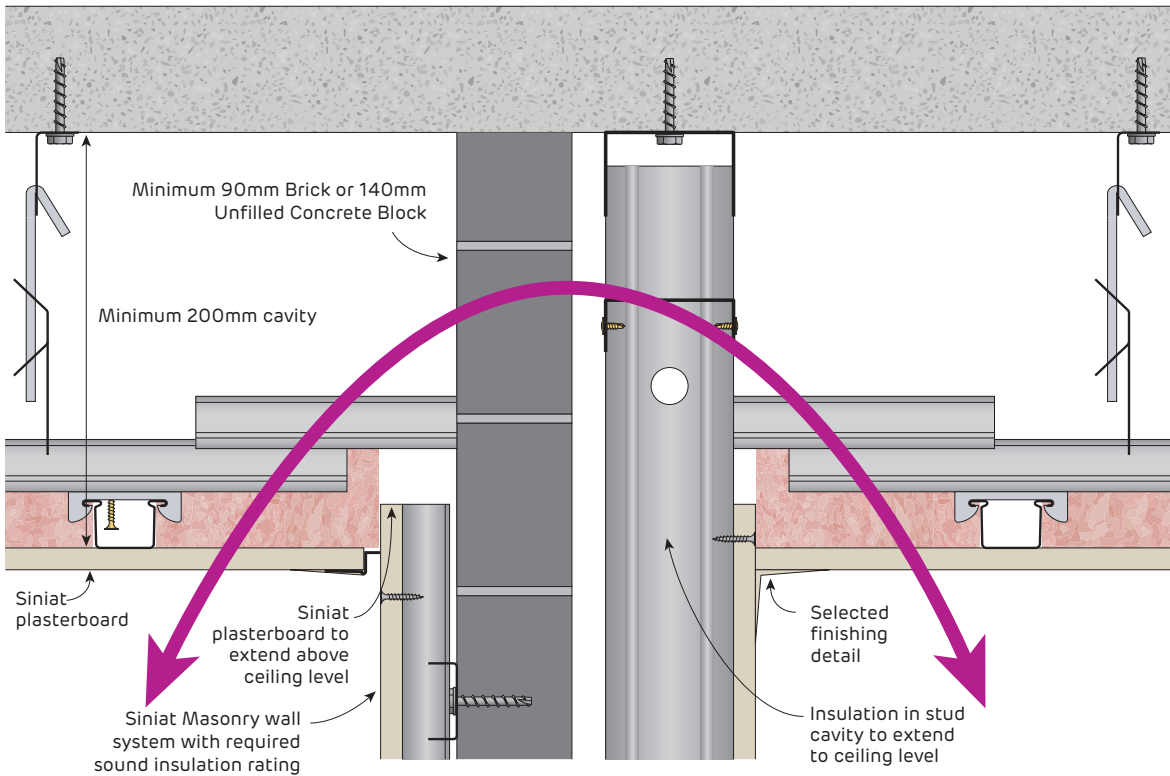
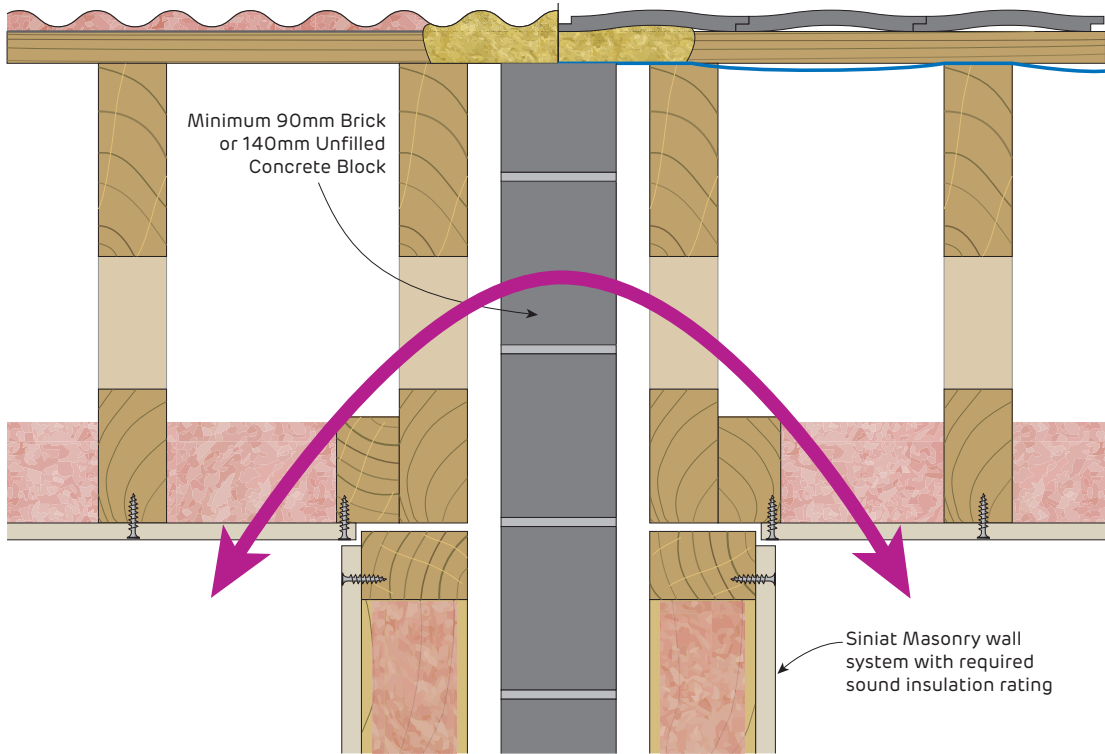
For more information on Pink® Batts please refer to Section 2.1 - Insulation.



CAC140

- Minimum 10mm plasterboard ceiling divided by minimum 90mm brick or 140mm unfilled concrete block

[Sound insulation numbers based on minimum 300mm cavity]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | | |
|--------|---|--|--|---------------------------|
| | | No Insulation | Minimum Pink® Batts R1.5 over the ceiling 1200mm from wall | Report Day Design 4738-16 |
| CAC140 | 1 layer of 10mm mastashield or spanshield | 58 (48) | 60 (50) | |

For more information on Pink® Batts please refer to Section 2.1 - Insulation.



CAC141

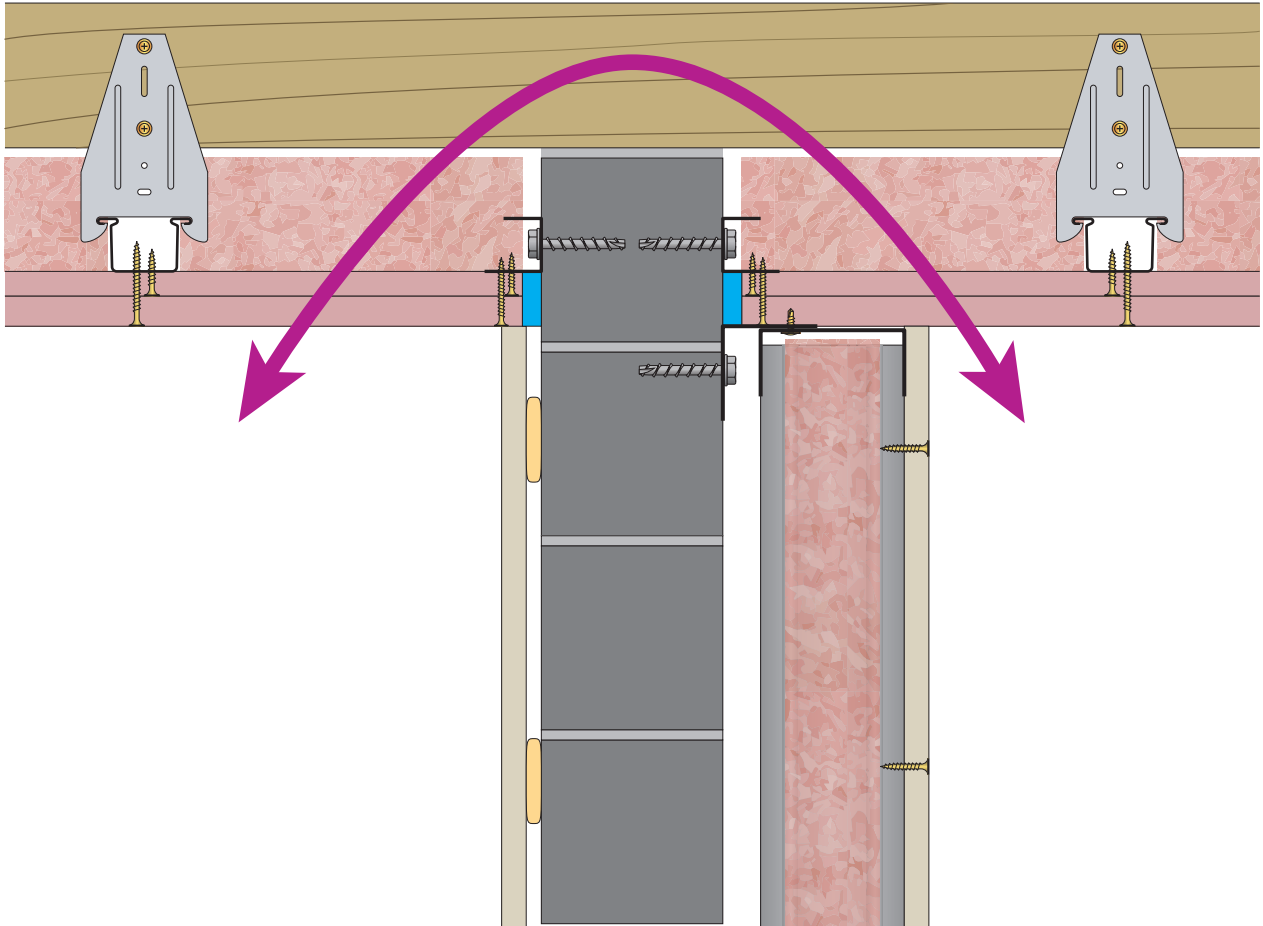
- 13mm **fireshield** and 16mm **fireshield** ceiling on clips and furring channel with minimum 40mm cavity to the underside of the joists, rafters or trusses.

[Maintains RISF 60 when using an RISF 60 minute ceiling]

[Sound insulation numbers based on minimum 300mm cavity]

[Non-acoustic penetrations in ceiling lining may degrade sound insulation performance]

[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation (Rw + Ctr) | |
|--------|---|--|-----------------------|
| | | Minimum Pink® Batts R1.5 over the ceiling 1200mm from wall | Report PKA 215 085 |
| CAC141 | 13mm fireshield and 16mm fireshield | (50) | |

For more information on Pink® Batts please refer to Section 2.1 - Insulation.



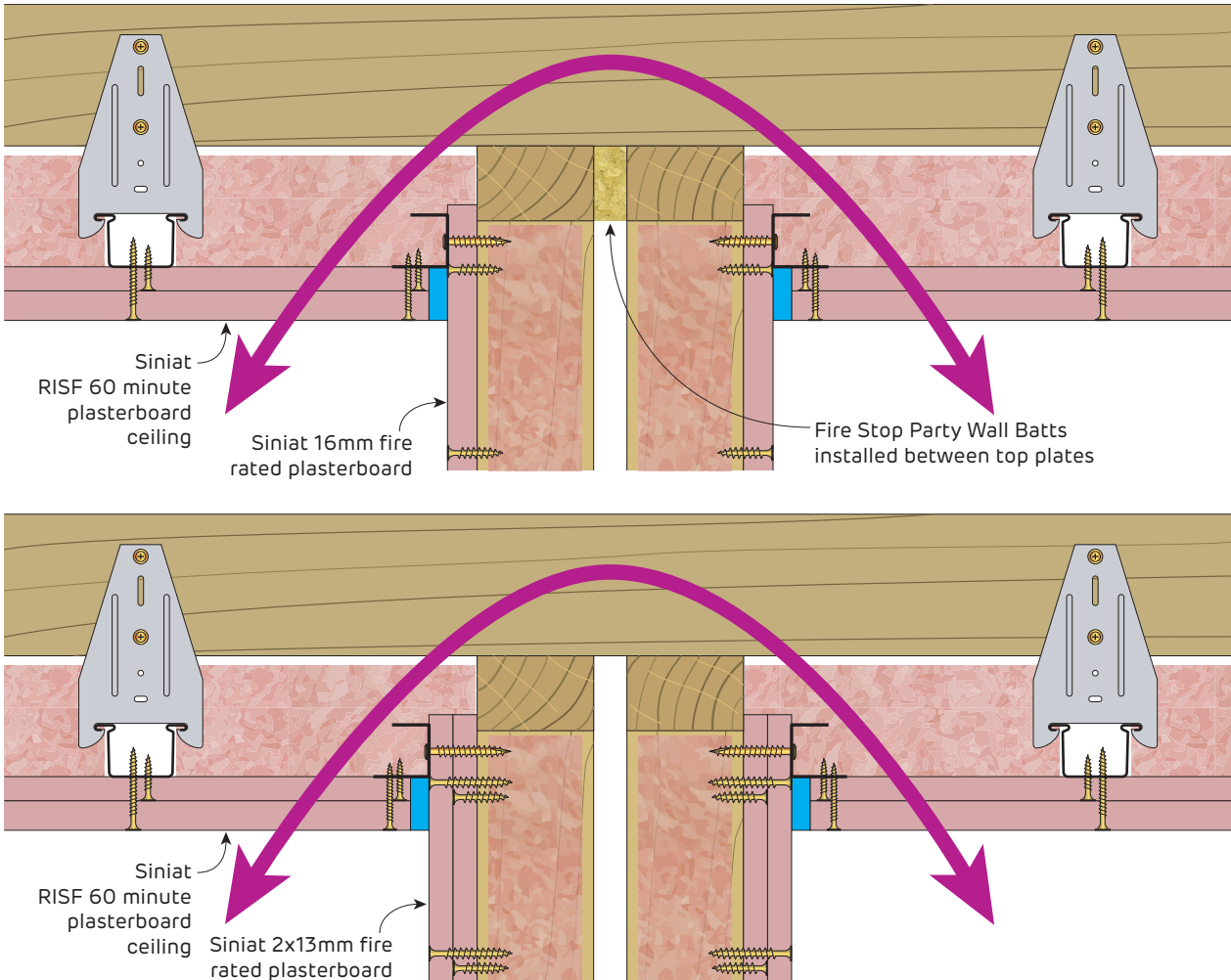
CAC160

- 13mm **fireshield** and 16mm **fireshield** (RISF 60 minute) ceiling on clips and furring channel with minimum 40mm cavity to the underside of the timber or steel joists, rafters or trusses.

[Sound insulation numbers based on minimum 300mm cavity]

[Non-acoustic penetrations in ceiling lining may degrade sound insulation performance]

[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation (Rw + Ctr) | |
|--------|---|--|-----------------------|
| | | Minimum Pink® Batts R1.5 over the ceiling 1200mm from wall | Report PKA 215 085 |
| CAC160 | 13mm fireshield and 16mm fireshield | (50) | |

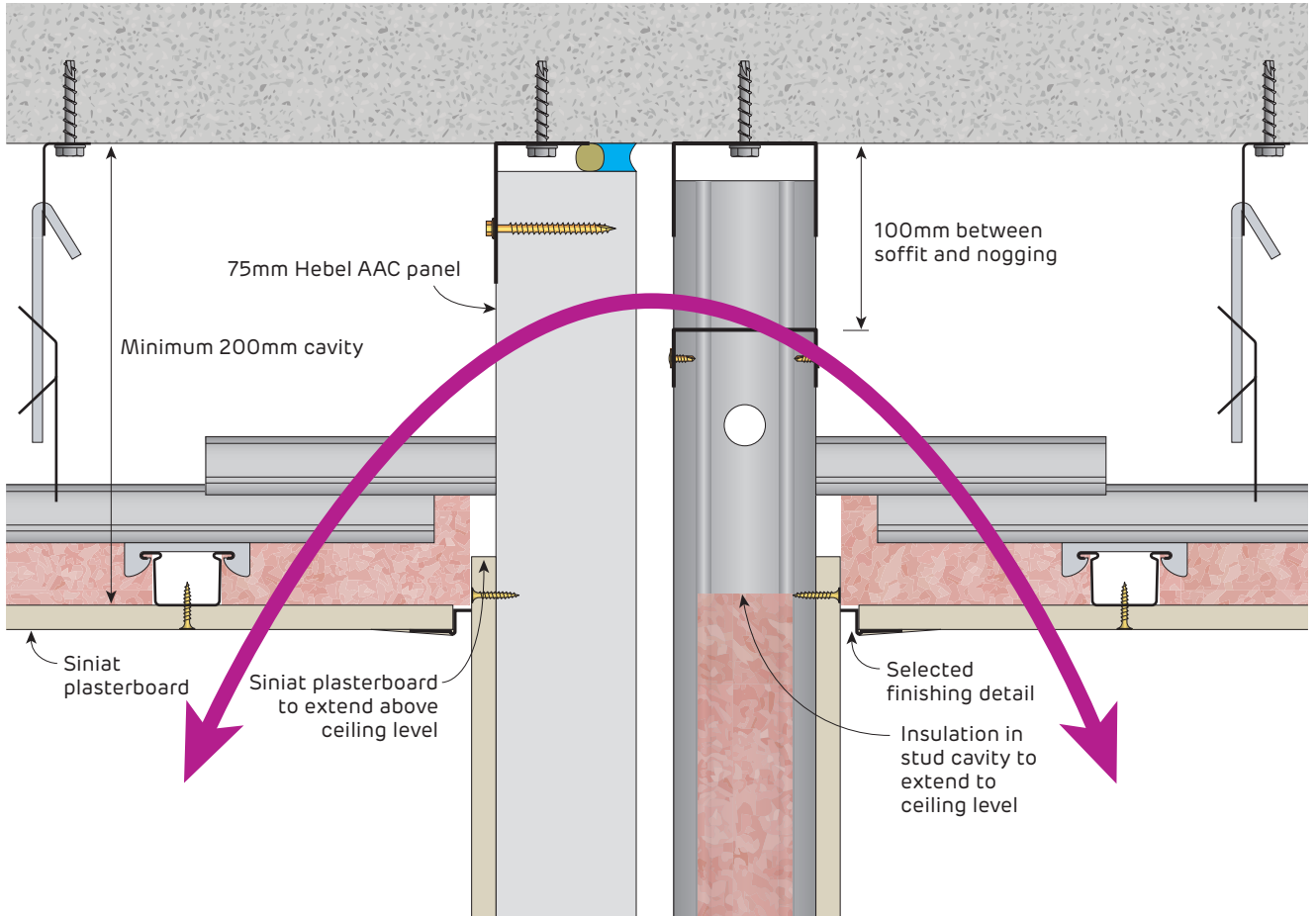


CAC150 - CAC151

- Minimum 10mm plasterboard ceiling divided by any Hebel AAC wall system suitable for separating walls

[Sound insulation numbers based on minimum 300mm cavity]

[Wall to have equal or higher sound insulation rating than CAC ceiling]



| System | Ceiling Lining | Airborne Sound Insulation Rw (Rw + Ctr) | | |
|--------|---|--|--|--------------------------------------|
| | | No Insulation | Pink® Partition 50mm 11 kg/m³ R1.2 to 600mm both sides of wall | Report Day Design 5008.10-1 |
| CAC150 | 1 layer of 10mm mastashield or spanshield | 45 (40) | 50 (45) | |
| CAC151 | 1 layer of 13mm mastashield | 50 (45) | 55 (50) | |

For more information on Pink® Partition batts please refer to Section 2.1 - Insulation.