

Soundproofing Ceilings

Timber Joist or Concrete Ceilings

Installation Instructions

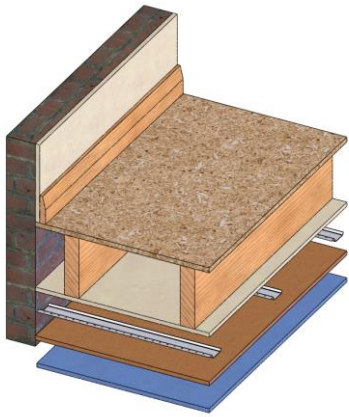


Acoustic Insulation

There are three options to achieve noise reduction through ceilings using PhoneStar sound insulation. Ceiling soundproofing results improve, as these high performance slimline solutions increase in thickness, yet the cost hardly alters due to the use of commodity building products. Select the best ceiling solution to suit your needs from these three options. If you are attaching PhoneStar to the walls also, then the ceiling should be upgraded first.

Downlights Treatment: Special fire and acoustic rated downlights should be used. They must not interfere with a ceiling that has already been approved for fire regulations. Alternatively use acoustic hoods. A better acoustic alternative is to install a suspended metal framed ceiling a minimum of 100mm below the upgraded acoustic ceiling so that the downlights will not interfere with the acoustic integrity of the ceiling. Alternatively Option 3 can be carried out using the 48 x 48mm battens and box the lights in with PhoneStar.

	<p>Option 1: Decoupled Ceiling Solution 43.5 - 46mm Thickness</p> <p>Application: Very good performance, with minimal loss of living space <u>for existing ceilings, without removal of existing plaster or plasterboard</u>. If the ceiling is uneven, batten it first, as per Option 3. This is a very popular choice for upgrading timber joist ceilings. Use Option 3 for concrete ceilings for best results.</p> <p>Construction: Reasonably Flat Existing Timber Joist or Bare Concrete Ceiling</p> <ul style="list-style-type: none"> - Ceiling with existing plaster / plasterboard - 16mm Resilient Bars - 15mm PhoneStar Acoustic Insulation - 12.5mm or 15mm acoustic (blue) plasterboard <p>See Page 2 for the Materials List & Installation Instructions</p>
	<p>Option 2: Decoupled Ceiling Solution 43.5 - 46mm Thickness</p> <p>Application: Higher performance, with minimal loss of living space <u>for new timber joist ceilings or where removal of existing plaster or plasterboard is desirable</u>. This is a very popular choice for open, exposed ceilings and is recommended over Option 1.</p> <p>Construction: New or Existing Timber Joist Ceiling</p> <ul style="list-style-type: none"> - Ceiling with timber joists exposed - Optional: 100mm x 45kg/m³ mineral wool or 50kg/m³ Pavaflex wood fibre to suit joist - 16mm Resilient Bars - 15mm PhoneStar Acoustic Insulation - 12.5mm or 15mm acoustic (blue) plasterboard - (optional second layer of plasterboard for additional fire insulation) <p>See Page 3 for the Materials List & Installation Instructions</p>
	<p>Option 3: Decoupled Battened Ceiling Solution 67.5 - 94mm Thickness</p> <p>Application: Ultimate performance, whilst maintaining minimal loss of living space for <u>existing timber joist or concrete ceilings</u>. Best solution for uneven ceilings and concrete ceilings.</p> <p>Construction: Existing Timber Joist or Concrete Ceiling</p> <ul style="list-style-type: none"> - Ceiling with existing plaster or plasterboard - 48mm x 24mm (WxH) battens or 48mm x 48mm (WxH) battens - Optional: 25 or 50mm x 45kg/m³ mineral wool or 50kg/m³ Pavaflex to suit batten size - 16mm Resilient Bars - 15mm PhoneStar Acoustic Insulation - 12.5mm or 15mm acoustic (blue) plasterboard - (optional second layer of plasterboard for fire insulation, on timber joist ceiling where existing plasterboard has been removed) <p>See Page 4 for the Materials List & Installation Instructions</p>



Option 1: Decoupled Ceiling Solution 43.5 - 46mm Thickness - For Existing Plastered or Plasterboarded Ceilings

Application: Very good performance with minimal loss of space for a reasonably flat and true ceiling. This is the most common soundproofing upgrade method for timber ceilings **where plasterboard must be left in place**. We would recommend Option 2 for better results though, if possible, as better acoustically as well as being safer as all electric wiring will be visible. This process uses Resilient Bars which decouple the new soundproofed ceiling from the original ceiling, so enhances results significantly by reducing vibrations.

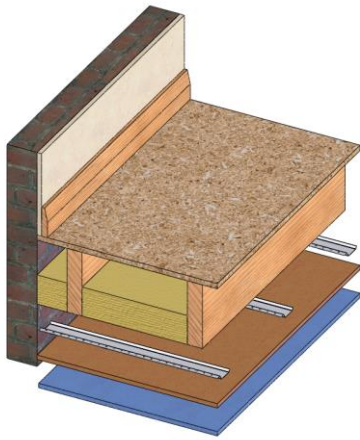
Materials List

- Resilient Bars (3M x 75mm x 16mm LxHxD)
- Drywall Screws to secure resilient bars into timber joists
- PhoneStar Acoustic Insulation (1200 x 800 x 15mm LxWxD)
- PhoneStar Eco-tape (50M x 50mm)
- Drywall Screws (25mm length)
- Acoustic (blue) Plasterboard (2400mm x 1200mm x 12.5/15mm LxWxD)
- Drywall Screws (38 - 42mm length)
- Acoustic / Intumescent Sealant

Installation Instructions - (Read all steps before fitting)

1. Remove the coving, if in position. It is not absolutely necessary to remove the plasterboard if it is in good condition, but remember there may be electric wires or water pipes behind the plasterboard, so much safer to remove it. Examine the ceiling thoroughly and if there are any holes or gaps, fill them with flexible sealant. Establish where the joists are located and their spacing, and mark their position on the wall or plasterboard for reference.
2. Fix the Resilient Bars perpendicular to the joists by screwing drywall screws through the pre-drilled holes in through the original plasterboard and into the timber joists so that they are safely and securely held. Begin at one edge of the ceiling and place the first bar up to 50mm away from the wall. Place the fixings 230mm max apart. Continue on fixing the bars at 400mm centres. You will need a bar close to the opposite edge of the ceiling but **NOT** touching the wall (regardless of the distance between the last 2 resilient bars). Also do **NOT** allow the resilient bars to touch the adjoining walls - leave a 5mm gap. Cut the resilient bars with a tinsnips or hacksaw if necessary. If resilient bars need to be joined up, overlap 2 bars by 50mm max and screw through this overlap into a joist. Mark the position of the ridged part of the bars on the surrounding walls as a reference point.
3. Begin in one corner of the ceiling, and holding PhoneStar (with the label side facing you), screw into the ridged part of the Resilient Bars, using 25mm long drywall screws equally spaced at 150mm centres. Be careful to leave screw head just below the board surface. It is very important **NOT** to let screws go through into the ceiling, as this will cause sound bridges.
4. Continue across the ceiling ensuring that **boards are butted closely together, leaving no gaps at perimeter or between boards. Remember, sound will pass through any gaps.** If there are any little gaps fill them with flexible acoustic sealant.
5. Where PhoneStar must be cut, **it is important to cut with the board laid horizontally across 2 tables or work benches to minimise sand spillage, then turn the cut board upright to seal the cut edges with PhoneStar Eco-tape. If too much sand filler is lost the final performance may be compromised.** It is best to cut PhoneStar with a fine tooth handsaw, jigsaw or Stanley knife. See Page 5 for more details on cutting and taping the PhoneStar boards. Where it is impractical to obtain a good fit at corners, scribe and cut as close as possible then caulk any remaining gaps with flexible acoustic sealant.
6. Attach the acoustic plasterboard by screwing 38 - 42mm drywall screws through the plasterboard, PhoneStar and in through the ridged part of the resilient bars, again at 150mm centres. Where practically possible make sure plasterboard joints do not align with joints on the previous board, as this may create an airpath. **It is very important to leave a 5mm perimeter gap around the 4 wall edges, to stop vibrations with the surrounding walls.**
7. Finish plasterboard, ensuring all screw heads and joints are adequately sealed.
8. Seal 5mm perimeter gaps with flexible acoustic / intumescent sealant.

Note: It is the fitter's responsibility to ensure that all materials are safely and securely held as they will be supporting the new soundproofed ceiling.



Option 2: Decoupled Ceiling Solution 43.5 - 46mm Thickness - For New Timber Joist Ceilings or where Existing Plasterboard has been Removed

Application: Higher performance with minimal loss of space for new timber joist ceilings or ceilings with no plasterboard in place. This is the most common soundproofing method for timber ceilings. This process uses Resilient Bars which decouple the new soundproofed ceiling from the original ceiling, so enhances results significantly by reducing vibrations.

Materials List

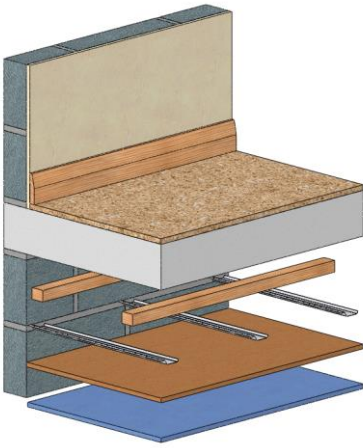
- 100mm x 45kg/m³ High Density Mineral Wool or 50kg/m³ Pavaflex Wood Fibre
- Resilient Bars (3M x 75mm x 16mm LxHxD)
- Drywall Screws to secure Resilient Bars to Joists
- Drywall Screws (25mm length)
- PhoneStar Acoustic Insulation (1200 x 800 x 15mm LxWxD)
- PhoneStar Eco-tape (50M x 50mm)
- Acoustic (blue) Plasterboard (2400mm x 1200mm x 12.5 or 15mm LxWxD)
- Drywall Screws (38 - 42mm length)
- Flexible mastic or Acoustic / Intumescent Sealant

Installation Instructions - (Read all steps before fitting)

1. Fit the high density mineral wool or Pavaflex Flexible Wood Fibre in the space between the joists.
2. Fix the Resilient Bars perpendicular to the joists by screwing drywall screws through the pre-drilled holes into the timber joists, so that they are safely and securely held. Begin at one end of the ceiling and place the first bar up to 50mm away from the wall. Continue on at 400mm centres. You will need a bar at the opposite end of the ceiling, close to the wall but **NOT** touching it (regardless of the distance between the last 2 resilient bars). The last bar can be reversed to ease installation. Also do **NOT** allow the resilient bars to touch the adjoining walls - leave a 5mm gap. Cut the resilient bars with a tinsnips or hacksaw if necessary. If resilient bars need to be joined up, overlap 2 bars by 50mm max and screw through this overlap into a joist. Mark the position of the ridged part of the bars on the surrounding walls as a reference point.
3. Begin in one corner of the ceiling, and holding PhoneStar (with the label side facing you), screw into the ridged part of the Resilient Bars, using 25mm long drywall screws equally spaced at 150mm centres, being careful to leave screw head just below the board surface. It is very important **NOT** to let screws go through into the ceiling, as this will cause sound bridges.
4. Continue across the ceiling ensuring that **PhoneStar boards are butted closely together, leaving no gaps at perimeter or between boards. Remember, sound will pass through any gaps.** If there are any little gaps fill them with flexible acoustic sealant.
5. Where PhoneStar must be cut, **it is important to cut with the board laid horizontally across 2 tables or work benches to minimise sand spillage, then turn the cut board upright to seal the cut edges with PhoneStar Eco-tape.** If too much sand filler is lost the final performance may be compromised. It is best to cut PhoneStar with a fine tooth handsaw, jigsaw or Stanley knife. See Page 5 for more details on cutting and sealing the PhoneStar boards. Where it is impractical to obtain a good fit at corners, scribe and cut as close as possible then caulk any remaining gaps with flexible acoustic sealant.
6. Attach the acoustic plasterboard by screwing 38 - 42mm drywall screws through the plasterboard, PhoneStar and in through the ridged part of the resilient bars, again at 150mm centres. Where practically possible make sure plasterboard joints do not align with joints on the previous board, as this may create an airpath. **It is very important to leave a 5mm perimeter gap around the 4 wall edges, to stop vibrations with the surrounding walls.** In addition a second layer of plasterboard can be used for fire insulation purposes, again leaving a 5mm perimeter gap around the walls, securing with 50 - 55mm drywall screws.
7. Finish plasterboard ensuring all screw heads and joints are adequately sealed.
8. Seal 5mm perimeter gaps with flexible acoustic sealant.

Note: It is the fitter's responsibility to ensure that all materials are safely and securely held as they will be supporting the new soundproofed ceiling.

Option 3: Decoupled Battened Ceiling Solution 67.5 - 94mm Thickness - For Existing Concrete or Timber Joist Ceilings



Application: Ultimate performance for existing concrete ceilings or timber joist ceilings with plasterboard in place, whilst maintaining minimal loss of living space. It is also the best solution for uneven ceilings. This process uses battens and Resilient Bars which decouple the new soundproofed ceiling from the original ceiling, so enhance results significantly by reducing vibrations.

Materials List

- 48mm x 24mm or 48mm x 48mm (WxD) timber battens
- Drywall Screws to secure battens to timber joist ceiling or 6mm (diameter) Hammer Fixings to secure battens to concrete ceiling
- **Optional** - 25mm or 50mm thick 45kg/m³ High Density Mineral Wool or 50kg/m³ Pavaflex Flexible Wood Fibre to suit batten
- Resilient Bars (3M x 75mm x 16mm LxWxD)
- Drywall Screws (25mm length)
- PhoneStar Acoustic Insulation (1200 x 800 x 15mm LxWxD)
- PhoneStar Eco-tape (50M x 50mm)
- Acoustic (blue) Plasterboard (2400mm x 1200mm x 12.5 or 15mm LxWxD)
- Drywall Screws (38 - 42mm length)
- Flexible mastic or Acoustic / Intumescent Sealant

Installation Instructions - (Read all steps before fitting)

1. It is not absolutely necessary to remove the plasterboard if it is in good condition, but remember there may be electric wires or water pipes behind the plasterboard, so much safer to remove it. We would also strongly recommend removing it from a concrete ceiling for safety reasons. Examine the ceiling thoroughly and if there are any holes or gaps, fill them with flexible sealant. Establish where the joists are located and their spacing, if it is a timber joist ceiling. If it is a bare concrete ceiling, remove any loose material using a wire brush.
2. Secure stud battens to ceiling by screwing drywall screws (for timber joist ceiling) or hammer fixings (for concrete ceiling) through the batten, existing plasterboard and into the timber joist or concrete, so that they are safely and securely held. Ensure the screw is embedded into the timber joist or actual masonry by 40mm minimum excluding the battens, plasterboard and any void. Space the battens at suitable centres so that the optional mineral wool / Pavaflex will be a push fit. Alternatively a totally independent timber / metal frame system can be installed below existing ceiling which will give optimal results.
3. Fix the Resilient Bars horizontally by screwing drywall screws through the pre-drilled holes into the battens only. Begin at one end of the ceiling and place the first bar up to 50mm away from the wall. Continue on at 400mm centres. You will need a bar at the opposite end of the ceiling close to the wall, but **NOT** touching it (regardless of the distance between the last 2 resilient bars). Also do **NOT** allow the resilient bars to touch the adjoining walls - leave a 5mm gap. Cut the resilient bars with a tinsnips or hacksaw if necessary. If resilient bars need to be joined up, overlap 2 bars by 50mm max and screw through this overlap into a batten. Mark the position of the ridged part of the bars on the surrounding walls as a reference point.
4. Begin at one corner of the ceiling, and holding PhoneStar (with the label side facing you), screw into the ridged part of the Resilient Bars, using 25mm long drywall screws equally spaced at 150mm centres, being careful to leave screw head just below surface. It is very important **NOT** to let screws go through into the ceiling, as this will cause sound bridges.
5. Continue across the ceiling ensuring that **boards are butted closely together, leaving no gaps at perimeter or between boards. Remember, sound will pass through any gaps.** If there are any little gaps fill them with flexible acoustic sealant.
6. Where PhoneStar must be cut, **it is important to cut with the board laid horizontally across 2 tables or work benches to minimise sand spillage, then turn the cut board upright to seal the cut edges with PhoneStar Eco-tape. If too much sand filler is lost the final performance may be compromised.** It is best to cut PhoneStar with a fine tooth handsaw, jigsaw or Stanley knife. See Page 5 for more details on cutting and taping the PhoneStar boards. Where it is impractical to obtain a good fit at corners, scribe and cut as close as possible then caulk any remaining gaps with flexible acoustic sealant.
7. Attach the acoustic plasterboard by screwing 38 - 42mm drywall screws through the plasterboard, PhoneStar and in through the ridged part of the resilient bars. Where practically possible make sure plasterboard joints do not align with joints on the previous board, as this may create an airpath. **It is very important to leave a 5mm perimeter gap around the 4 walls, to stop vibrations with the surrounding structures.**
8. Finish plasterboard ensuring all screw heads and joints are adequately sealed and seal 5mm perimeter gaps with flexible acoustic sealant.
Note: It is the fitter's responsibility to ensure that all materials are safely and securely held as they will be supporting the new soundproofed ceiling.

Cutting and Taping Guide



Acoustic Insulation

Site Conditions:

- PhoneStar must be stored in a dry location
- PhoneStar must be stored flat
- The building structure should be watertight (unless offsite instructions are adhered to)
- Acclimatise PhoneStar in the fitting location
- Read all instructions carefully prior to fitting
- If in doubt, please call the PhoneStar support team on UK: +44 (0)20 7998 1690 or Ireland: +353 (0)1 8409 286

Cutting PhoneStar:

- Ensure careful handling to minimise filler spillage – otherwise the final performance may be compromised
- Only cut the PhoneStar board while it is laid flat
- Use a straight edge for guidance
- Cut with a jigsaw, hand saw, Stanley knife or circular saw (ceramic tile tungsten carbide grit jigsaw blade, or general purpose tungsten carbide fine tooth circular saw blade, for longevity)
- Immediately seal all cut edges with PhoneStar Eco-Tape while holding the board upright - see below

Taping the Cut Edges of PhoneStar with PhoneStar Eco-Tape

PhoneStar cut edges must be immediately taped after each single cut, in order to seal the sand filler. Otherwise the final performance of the PhoneStar sound insulation system may be compromised.



1. Hold the cut edge upwards. Roll out the tape with a 3 to 5cm overhang at each side.



2. Press and smooth the tape down onto the cut edge.



3. Tear the tape to length.



4. Press and smooth the tape down both edges.



5. Press and smooth the tape down both front and back faces.



6. Fold in the remaining wings onto both front and back faces.

A professionally cut and taped PhoneStar board, which is simple to do.

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