

# Soundproofing Floors

## Timber Joist or Concrete Floors

### Installation Instructions



# Acoustic Insulation

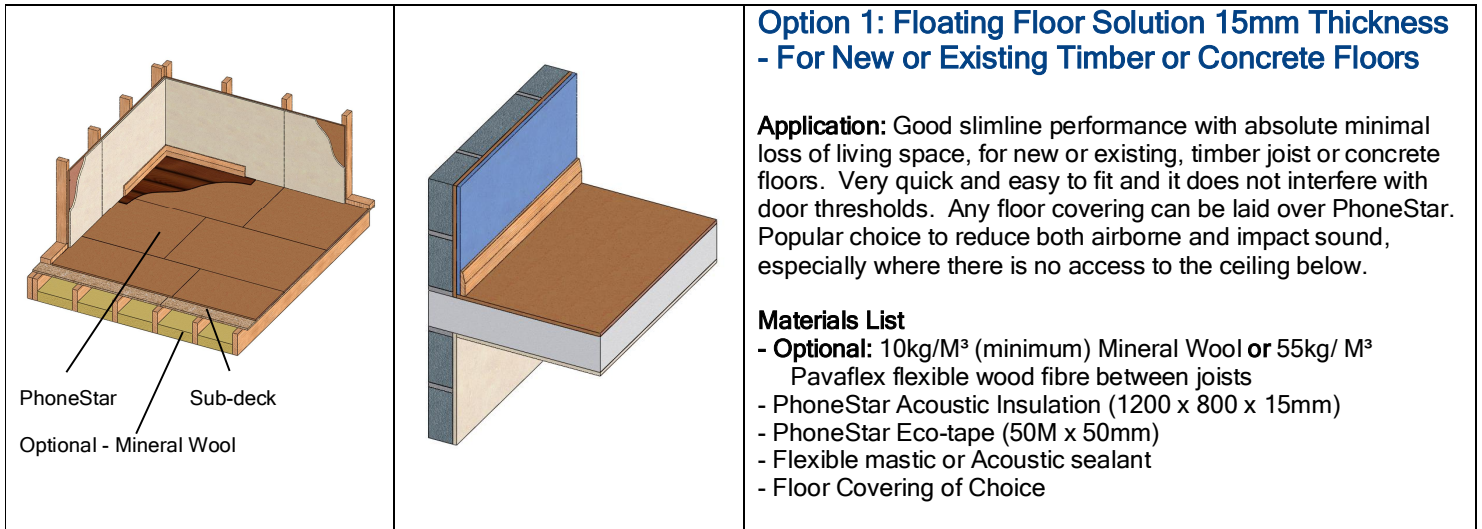
### Please Note: PhoneStar was previously branded as Phonewell

There are two options to achieve noise reduction through floors using PhoneStar sound insulation. PhoneStar is excellent at reducing both airborne and impact sound through floors. Select the best floor solution to suit your requirements, but Option 2 will give a superior performance, and is the recommended solution to meet and exceed Building Regulations for Sound. If you are attaching PhoneStar to the walls also, then the floor should be upgraded first.

		<h4>Option 1: Floating Floor Solution - 15mm Thickness</h4> <p><b>Application:</b> Good slimline performance, with absolute minimal loss of living space, <u>for new or existing, timber joist or concrete floors.</u> Popular choice to reduce both airborne and impact sound especially where there is no access to the ceiling below.</p> <p><b>Construction: New or Existing, Timber Joist or Concrete Floor</b></p> <ul style="list-style-type: none"> <li>- Floor with a sub-deck</li> <li>- 15mm PhoneStar Acoustic Insulation</li> <li>- Floor Covering of Choice</li> </ul> <p><b>See Page 2 for the Materials List &amp; Installation Instructions</b></p>
		<h4>Option 2: Floating Floor Solution (15mm Thickness Above) with Decoupled Ceiling Below (28.5 - 79mm Thickness)</h4> <p><b>Application:</b> High performance, with minimal loss of living space <u>for new or existing, timber or concrete floor/ceiling structures,</u> where you have access to both the floor above and ceiling below.</p> <p><b>Construction: New or Existing, Timber Joist or Concrete Floor / Ceiling</b></p> <ul style="list-style-type: none"> <li>- Floor with a sub-deck</li> <li>- 15mm PhoneStar Acoustic Insulation</li> <li>- Floor Covering of Choice</li> </ul> <p><b>Ceiling Below</b></p> <ul style="list-style-type: none"> <li>- Ceiling with or without existing plaster or plasterboard</li> <li>- <b>Optional:</b> 48 x 24mm battens or 48 x 48mm timber battens</li> <li>- <b>Optional:</b> Mineral wool in between these battens</li> <li>- 16mm Resilient Bars</li> <li>- 12.5mm or 15mm sound resistant (acoustic) plasterboard</li> <li>- (Optional second layer of plasterboard for new ceilings)</li> </ul> <p><b>See Page 4 for the Materials List &amp; Installation Instructions</b></p>

### General Information:

1. The entire floor and ceiling structure is responsible for the direct transmission of sound through the separating floor. For floor treatment, PhoneStar is the floating resilient layer which has exceptional Airborne and Impact sound reduction values. However, if care and attention to detail are not carried out to a high standard, the overall performance will be affected.
2. Flanking walls (walls connected to the separating floor) can carry both Airborne and Impact sounds to the room above or below so it is therefore imperative that no additional **hard finishing surface** touches against these surrounding walls. For additional acoustic treatment of flanking and separating walls, see our fitting instructions for Soundproofing Walls. However, it is critical that PhoneStar sound insulation board is butted up tightly to surrounding walls.
3. Where a wet trade is following the fitting of exposed PhoneStar, a temporary, peel clean, protective surface should be laid.
4. It is the fitter's responsibility to ensure all materials are safely and securely held.



### Option 1: Floating Floor Solution 15mm Thickness - For New or Existing Timber or Concrete Floors

**Application:** Good slimline performance with absolute minimal loss of living space, for new or existing, timber joist or concrete floors. Very quick and easy to fit and it does not interfere with door thresholds. Any floor covering can be laid over PhoneStar. Popular choice to reduce both airborne and impact sound, especially where there is no access to the ceiling below.

#### Materials List

- **Optional:** 10kg/M<sup>3</sup> (minimum) Mineral Wool or 55kg/ M<sup>3</sup> Pavaflex flexible wood fibre between joists
- PhoneStar Acoustic Insulation (1200 x 800 x 15mm)
- PhoneStar Eco-tape (50M x 50mm)
- Flexible mastic or Acoustic sealant
- Floor Covering of Choice

## Installation Instructions - (Read all steps before fitting)

- 1. New Timber Floors:** 100mm of 10kg/M<sup>3</sup> (minimum density) Mineral Wool or Pavaflex Flexible Wood Fibre can be placed between the timber joists to enhance results further. Leave an air void between this and the underside of the sub-deck. Then the sub-deck must be fitted.
- 2. Timber Floors:** PhoneStar can only be fitted over a sub-deck - not directly on to joists. Caulk with flexible acoustic sealant between the perimeter of the sub-deck and the surrounding walls. Also ensure the sub-deck sheets are tightly fitted together and if there are any gaps fill them with flexible acoustic sealant. If the sub-deck is in poor condition a layer of hardboard or plywood could be bonded over the entire floor to provide a seal, leaving a small gap at the perimeter edges to avoid flanking noise.
- 3. Concrete Floors:** A solid floor may need treating with an appropriate waterproof membrane (DPM) to prevent moisture content rising into the finished floor surface. Consult the finishing floor manufacturer's instructions for maximum moisture content. Many manufacturers require this as a condition of their warranty.
- 4. New Build:** If it is preferable to finish installing wall boards first, before fitting PhoneStar, then this is possible by using 15mm thick packing pieces (15mm PhoneStar or plasterboard off cuts are ideal) to ensure the wall board is 15mm above the sub-deck - the PhoneStar floating floor will then be slotted into this gap. Wall boards may be seated directly on top of PhoneStar if fitted afterwards.
- 5. In refurbishment situations,** ideally remove the skirting board and fit PhoneStar so that it is butted tightly to the perimeter walling boards, otherwise fit butted to the skirting. When refitting skirting, leave a 2-3mm gap between bottom of skirting and new floor surface, to avoid vibration. This gap can be filled with flexible acoustic sealant if desired.
- 6.** The surface of the raw floor must be clean, dry and sufficiently level. If required, any unevenness can be levelled out with sand, although PhoneStar does have minor correction capabilities.
- 7.** PhoneStar acoustic insulation boards are laid down with the label side facing up, floating on the sub-deck floor. The boards should be laid down tightly butted together in a brickwork pattern, and fitted tightly up to the perimeter walls. It is best to **lightly tap** each board in both directions with a light hammer using a 2" x 1" small batten as protection, being careful not to cause a lip. In wet rooms do **not** adopt this technique - simply lay the boards touching as described in 'Fitting PhoneStar in Wet Rooms'. There should be **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.
- 8.** No flanking strips are required to isolate PhoneStar from the walls. If the installer has opted to add a harder more traditional floating surface on top of PhoneStar, e.g. plywood, then this surface will need isolating from the perimeter walls with a flanking strip. If it eases installation to isolate both PhoneStar and the harder surface together, then this is acceptable.
- 9.** Where PhoneStar must be cut, **it is important to cut with the board laid horizontally across 2 tables or trellises to minimise sand spillage, then turn the board upright to seal the cut edges with the supplied PhoneStar Eco-tape.** See Page 5 for more details on cutting and taping the PhoneStar boards.
- 10.** Check the entire floor surface is covered in PhoneStar and fitted to good workmanship standards making sure all joints are tightly fitted and that no gaps remain.
- 11.** Where the developer has opted for a traditional 18mm to 22mm tongue & groove overlay then all flooring finishes are laid in the conventional way, and the following instructions are irrelevant. Otherwise see Page 3 for instructions to lay various floor coverings directly over PhoneStar.
- 12. Skirting Boards:** Ensure that you leave a 2-3mm gap between the new floor surface and the bottom of the skirting board to eliminate the possibility of flanking noise between the walls and the floor. This space can be filled with flexible acoustic sealant if desired.



# Fitting Floor Coverings over PhoneStar

## Fitting Solid Wood, Engineered Wood, Parquet & Laminate Floors Directly over PhoneStar

1. Wood flooring must be acclimatised in the fitting location prior to fitting for the length of time specified by the flooring manufacturer. This prevents shrinkage, cupping and warping at a later date.
2. Prior to installation, the installer has the final responsibility to inspect the finished flooring as to grade, manufacture and factory finish. The installer must use reasonable selectivity and discard or cut off pieces with deficiencies.
3. It is imperative that the expansion gap is carefully adhered to, as this is also necessary to prevent the transmission of sound from the wood flooring to the adjoining walls which in turn would transmit flanking noise. This gap is usually 6mm (12mm when floating) around all vertical objects and the whole perimeter of the room.

### **Mechanical fixing (usually 6mm expansion gap):**

1. Solid wooden flooring cannot be nailed directly to PhoneStar or more importantly through to the sub-deck, which would cause a sound bridge. For 'Hidden Nail Technique' glue 9mm (minimum) plywood, OSB or chipboard on top of PhoneStar. Leave a **6mm gap between the wooden layer and the walls (and any other vertical structures) to reduce vibration and flanking noise.**
2. Then nail the timber flooring directly into 9mm top layer only, leaving expansion gaps as per manufacturer's instructions. Leave a **6mm gap between the flooring and the walls and any other vertical structures.** The gap at the perimeter can be sealed with flexible acoustic sealant.

### **Bonding (usually 6mm expansion gap):**

1. If the installer requires the option of being able to remove the wood flooring at a much later date without damaging the PhoneStar acoustic layer, then a wooden overlay must be laid and bonded to PhoneStar - 3mm to 6mm thick plywood is common. It is important to leave a **6mm expansion gap around vertical objects and the whole perimeter of the room.**
2. For bonding wooden flooring, use the wooden flooring adhesive as recommended by the flooring manufacturer (usually rubberised wood flooring glue) which should be spread evenly on the floor with a medium notched trowel, as per the flooring manufacturer's instructions.
3. Always check for an adequate adhesive bond before proceeding.

### **Floating (usually 12mm expansion gap, 6mm for Laminate):**

1. Flooring suitable for fitting as a floating layer, as per manufacturer's guidance, (usually over 7mm thick), should be laid directly over PhoneStar, with or without underlay as per flooring manufacturer's recommendations.
2. Joint Sealant for Laminate flooring can be used to permanently protect Laminate from moisture effects, if necessary.

## Fitting Ceramic Tiles Directly over PhoneStar

1. It is recommended to use marine ply as your sub floor, if possible.
2. It is strongly advised to bond a Tile Backing Board or a 6mm Marine (WBP) Plywood board over PhoneStar using a grab adhesive. This will protect the PhoneStar acoustic floor should you wish to change the tiles in the future. **It is imperative to leave a 5mm expansion gap between the tile backing board / plywood and any vertical objects, as well as the whole perimeter of the room, and fill the gap with a permanently flexible and waterproof sealant, to reduce flanking noise.**
3. If tiling a **wet room**, please see the next section.

## Fitting Ceramic Tiles Directly over PhoneStar in Wet Rooms

1. It is recommended to use marine ply as your sub floor, if possible. We strongly recommend that you receive professional advice.
2. Do not knock PhoneStar boards tightly together - simply lay lightly butted allowing for minimal expansion.
3. In high moisture areas it is important to lay a vapour barrier. Then bond a Tile Backing Board or a 6mm Marine (WBP) Plywood board over PhoneStar using a grab adhesive. **It is imperative to leave a 5mm expansion gap between the tile backing board and any vertical objects, as well as the whole perimeter of the room, and fill the gap with a permanently flexible and waterproof sealant, to reduce flanking noise.**

## Fitting Carpet Directly over PhoneStar

### **Carpets requiring an independent underlay:**

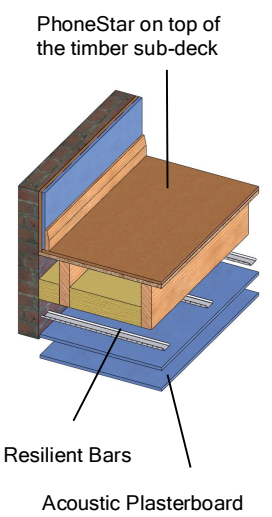
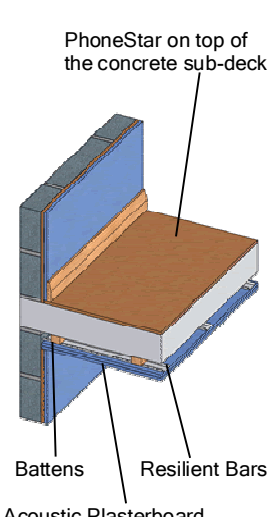
1. PhoneStar is not an 'underlay'; a good quality carpet underlay is still required to protect the carpet and PhoneStar.
2. Carpet Grippers can be bonded to PhoneStar in the same manner as for solid concrete floors; using a rapid set grab adhesive recommended for carpet grippers. The nails are hammered through the carpet and into the carpet gripper - however **it is imperative that the nails do not pass through into the sub-deck below.** Common carpet gripper nails are insufficient length to pass through the 15mm PhoneStar, but it is the installer's responsibility to confirm this on site.

### **Carpets with a pre-bonded foam or felt underlay:**

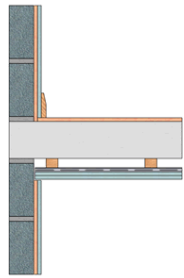
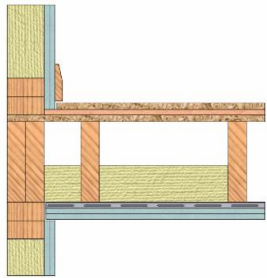
1. These carpets usually incorporate a thin foam or felt backing, insufficient to spread point pressure load and therefore require a 3mm to 6mm plywood bonded to PhoneStar prior to fitting the carpet.
2. The plywood is bonded to the PhoneStar leaving a 5mm expansion gap around all vertical objects and the whole perimeter of the room which can be filled with permanently flexible acoustic sealant.
3. Foam backed carpets should always have a brown building paper laid prior to fitting which prevents the foam from sticking to the floor when its glue seeps out.

## Fitting Linoleum & Vinyl Directly over PhoneStar

1. Linoleum or Vinyl cannot be fitted directly on the surface of PhoneStar. For commercial applications use a hard Linoleum and Vinyl subfloor system floating over PhoneStar or 6mm plywood bonded to PhoneStar. For domestic applications, bond 3mm to 6mm plywood to PhoneStar.

 <p>PhoneStar on top of the timber sub-deck</p> <p>Resilient Bars</p> <p>Acoustic Plasterboard</p> <p>Optional: Mineral wool or Pavaflex in the cavity</p>	 <p>PhoneStar on top of the concrete sub-deck</p> <p>Battens</p> <p>Resilient Bars</p> <p>Acoustic Plasterboard</p> <p>Optional: Mineral wool or Pavaflex in the cavity between the timber battens</p>	<h3>Option 2: Floating Floor Solution (15mm Thickness Above) with Decoupled Ceiling Below (28.5 - 79mm Thickness) - For New or Existing, Timber or Concrete Floors</h3> <p><b>Application:</b> Ultimate performance with minimal loss of space for a timber or concrete floor and ceiling structure. This is a very effective soundproofing method if you have access to the floor and the ceiling below. This process uses Resilient Bars which decouple the new ceiling below from the original ceiling, so enhances results significantly by reducing vibrations.</p> <p><b>Materials List</b></p> <ul style="list-style-type: none"> <li>- PhoneStar Acoustic Insulation (1200 x 800 x 15mm)</li> <li>- PhoneStar Eco-tape (50M x 50mm)</li> <li>- Resilient Bars (3M x 75mm x 16mm deep)</li> <li>- 6mm (diameter) Hammer Fixings to secure battens / resilient bars to concrete ceiling <b>or</b> Drywall Screws if it is a timber ceiling</li> <li>- Drywall Screws (25mm length)</li> <li>- Sound Resistant (Acoustic) Plasterboard (2400mm x 1200mm x 12.5/15mm)</li> <li>- Flexible mastic or Acoustic sealant</li> </ul> <p><b>Timber Ceilings - Optional</b></p> <ul style="list-style-type: none"> <li>- 45kg/M<sup>3</sup> high density Mineral Wool <b>or</b> 55kg/M<sup>3</sup> Pavaflex in between joists</li> </ul> <p><b>Concrete Ceilings - Optional, but highly recommended</b></p> <ul style="list-style-type: none"> <li>- 48mm x 24mm battens <b>or</b> 48mm x 48mm timber battens (WxD)</li> <li>- 25 or 50mm x 45kg/m<sup>3</sup> mineral wool <b>or</b> Pavaflex to suit batten size</li> </ul>
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## Installation Instructions - (Read all steps before fitting)



**1. Floor Above:** Lay PhoneStar on the floor above, as per instructions on Page 2.

**2. Ceiling Below:** Remove the coving, if in position. It is not necessary to remove the plasterboard, if in place. Examine the ceiling thoroughly and if there are any holes or gaps, fill them with flexible acoustic sealant. On **existing timber ceilings** establish where the joists are located and their spacing, and mark their position on the wall for reference.

**3. On new exposed timber ceilings** 45kg/M<sup>3</sup> High Density Mineral Wool **or** Pavaflex wood fibre can be placed between the timber joists to enhance results further, ensuring that it does not touch the sub-deck.

**4. If it is a bare concrete ceiling** remove any loose material using a wire brush. It is strongly recommended to first screw timber battens on to a concrete ceiling using 6mm diameter hammer fixings, and then to put mineral wool or Pavaflex in between the battens to further reduce sound. The battens can drop down either 24mm or 48mm depending on available room height.

**5. On timber ceilings** fix the Resilient Bars perpendicular to the joists by screwing drywall screws through the pre-drilled holes in through the original plasterboard (if in place) and into the timber joists, **or** if it is a solid ceiling use 6mm hammer fixings to secure the resilient bars to the ceiling, if not using battens first. The fixings should penetrate the concrete or timber joists by a minimum of 40mm. If battens are used on concrete ceilings, the resilient bars are screwed perpendicular to these battens and are secured by screwing drywall screws into the battens only. It is the fitter's responsibility to make sure that all these fixings are very safely and securely held, as they are supporting the new soundproofed ceiling. Begin at one edge of the ceiling and place the first bar approx 50mm away from the wall. Continue on at 400mm centres. You will need another 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. This Resilient Bar process creates an air void so enhances results even further. Mark the position of the ridged part of the bars on the surrounding walls as a reference point.

**6. Attach the acoustic plasterboard** by screwing 25mm drywall screws through the plasterboard and in through the ridged part of the resilient bars, at 150mm centres. **It is very important to leave a 5mm perimeter gap around the edges, to stop vibrations with the surrounding walls.** On a new timber ceiling, add a second layer of plasterboard, for fire regulations.

**7. When finished installing plasterboard** fill and tape all joints and screw heads. Seal 5mm perimeter gaps with flexible acoustic sealant.

# 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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