*eco*insulation **Thermal Underfloor (Wrapped)**

These instructions should be read in conjunction with local standards AS 3999 or NZS 4246 Building Regulations. Before you start installing, please make sure you are familiar with our Health and Safety Information contained in this document and confirmed *eco*insulation Thermal underfloor (wrapped) is suitable for your application. Ensure that you use tools and equipment that are suitable for the intended application. This will include suitable safety equipment. Try and avoid staples made from metal or other conductive materials if possible. Installing underfloor insulation can be hazardous due to the working environment and electrical cables.

Do not start work until the site is safe!

Assess the underfloor condition and structure together with the method of installation you are to use based on the appropriate requirements established in the building code, site assessment and or plans provided. Installation must be completed to the requirements of relevant standard: AS 3999 or NZS 4246. When insulating any floors, care should be taken to ensure that sub floor ventilation is maintained according to AS/NZS 1860 or heed the recommendations of particleboard/timber flooring suppliers. Try and avoid staples made from metal or other conductive materials if possible. Installing underfloor insulation can be hazardous due to the working environment and electrical cables.

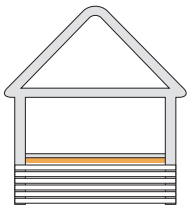
Tools required:

- Sharp knife for trimming insulation
- Ladder or suitable scaffold
- Suitable clothing (see our Health and Safety Information)
- Tape measure
- Stapler

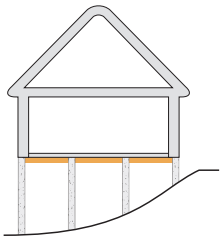
Application:

ecoinsulation Thermal underfloor (wrapped) comes in long 2.7m segments and is suitable for most sub-floor applications including pole houses and open sub-floors. It is designed for use above "non-occupied" spaces such as the following:

Sub-floor with timber battens



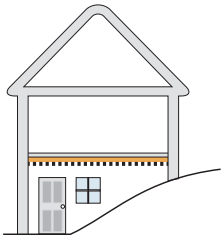
Pole house



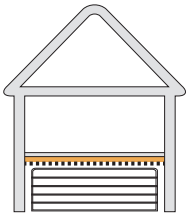
Sub-floor solid perimeter

When installed above "occupied spaces", such as workshops, garages, and basements, a suitable compliant lining such as plasterboard or fibre cement should be installed over the insulation. Alternatively, we recommend installing ***eco***insulation Faced Thermal underfloor.

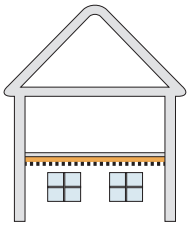
Workshop with lined floor joist



Garage with lined floor joist



Basement rooms with lined floor joist



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STEP 1

• To calculate the number of packs needed, determine the area (m^2) to be insulated by multiplying the length by the width. The number of m^2 of insulation material is clearly marked on each pack. Divide the total area to be insulated by the m^2 in a pack to determine the number of packs required (don't forget to round up to the nearest whole pack). Allowances should be made for areas that are unable to be insulated, and if the insulation is being folded down into a narrower space.
• If possible leave the insulation in the packaging until you're in position and ready to install.

STEP 2

• The segments are manufactured at 470mm wide to suit joist spacing's of up to 515mm centres. The grey coloured protective plastic should be facing down, and the thinner brown plastic should be placed against the floorboards.
• The underfloor segment fits between the joists with the plastic tabs folded down at right angles on either side.
• Fix staples 65mm from the underside of the flooring to allow the glasswool to fill the space above.
• Ensure there are no air-gaps between the insulation and the floor. If the spacing is less than 470mm, compress the additional insulation into the cavity and continue to fix the tabs as above.
• Before installing each segment, ensure you identify any electrical cabling. Extreme care must be taken not to staple through any electrical wiring.
• Secure the insulation in place by stapling along the plastic tabs at a minimum of 200mm centres.
• The segments can be easily cut to a manageable length.
• Secure one side of the segment before gently pulling the plastic film taut and securing the other side, working your way along the segment.
• When abutting to dwangs or nogs the segment should be installed 50mm longer in order to create a turn down, this is then fixed with staples.
• When abutting insulation, ensure there is a close firm fit with no gaps.
• A clearance of 100mm should be left around all waste water pipes.
• When insulating any floors, care should be taken to ensure that subfloor ventilation is maintained according to E2/AS1 design requirements for New Zealand and the NCC sub-floor ventilation retirements in Australia or head the recommendations of particleboard/timber flooring suppliers.
• Insulation should be installed in accordance with local standards AS 3999 and NZS 4246.

For Pole Houses

• Increase the staples to 100mm centres.
• Tape joins with a suitable tape.
• Ensure that all loose material is secured to protect from wind damage.

STEP 3

• Complete a final check of the installation ensuring all areas have been insulated and that you have an even and consistent layer of insulation.
• Finish your project by removing all packaging from the underfloor and disposing of all rubbish and excess insulation responsibly.

We recommend that once completed another person checks the work to ensure it has been installed according to required standards.

HEALTH AND SAFETY INFORMATION

SAFETY WARNINGS AND HAZARDS

- You must turn the mains power "Off" before entering the work space, and, if in any doubt about how to turn the power "Off", you must consult a licensed electrician.
- Working in areas that contain live electrical wiring is extremely hazardous. Take extreme care to avoid touching any live overhead electrical lines, supply cables or any other live cables in the workspace.
- Defective electrical cables, exposed terminals and conductors of electrical equipment such as light fittings and fans can cause burns and electric shocks please exercise caution when working near such hazards – check with an electrician if you are unsure if the cabling is safe.
- Working in hot and poorly ventilated areas when installing insulation can be dangerous.
- Working at heights, when installing insulation can be dangerous.

BEFORE INSTALLATION

- You must turn the mains power "Off" and, if in any doubt about how to turn the power "Off", consult a licensed electrician.
- Do not enter the workspace for the purposes of the pre-work inspection or the installation until you are satisfied that the power has been isolated. Even after isolating the power via the switchboard there may still be an electrical mains cable in either the ceiling or underfloor space that is live.
- Complete a pre-work assessment before installation to identify safety hazards which may include but are not limited to the following:
    - access to the underfloor area,
    - working at heights,
    - electrical safety hazards,
    - adequate ventilation of the work area and
    - nails and sharp objects on the ground

- Before commencing work you must have systems in place to reduce risks identified in the pre-work assessment such as but which are not limited to:
    - systems to prevent falling when working at heights.
    - ventilate the working area if possible.
    - cover exposed skin - when working in an unventilated area, wear a disposable face mask.
    - rinse hands in cold water before washing.
    - wear goggles when working overhead.
    - clean using vacuum equipment.

DURING INSTALLATION

- Work with another person and maintain contact throughout the process.
- Only open bags as required.
- Wear appropriate clothing for the job such as long sleeved top, flat rubber sole shoes, gloves conforming to Australian Standard AS/NZS 2161 and ventilated non-fogging dust resistant goggles conforming to AS/NZ 1336, and a P2 dust mask.
- Avoid eye contact with dust or fibres to minimise eye or skin contact and inhalation during handling.
- Avoid installing insulation in hot weather and at the hottest part of the day.
- When fixing devices in ceiling spaces or underfloors, or in proximity to electrical wiring, where possible don't use conductive staples or fixings.

PROVEN PERFORMANCE

- Preferred by professional installers concerned with quality, appearance and productivity.
- Excellent acoustical properties reduce sound transmission in the home when properly installed.

ELECTRICAL SAFETY CONSIDERATIONS BEFORE ISOLATING POWER

- Locate and review the incoming power supply, main switchboard and meter box.
- Ensure you understand if there is a main isolator and how power can be safely isolated.
- Ensure you understand the direction of the ''On'' and ''Off'' position of the main switch (NOTE: the ''Off'' position is not always as it seems - check with an electrician if you are unsure).
- Before installation, switch ''Off'' the electricity supply at the main switchboard (check with an electrician if you are unsure if power can be turned ''Off'' at the switchboard).
- Be aware that even after isolating the power via the switchboard there may still be an electrical mains cable in either the ceiling or underfloor space that is live. Take extreme care to avoid touching any live overhead electrical lines, supply cables or any other live cables in the workspace.

PROCEDURE FOR ISOLATION - CERAMIC FUSES (IF IN DOUBT YOU MUST CONSULT A LICENSED ELECTRICIAN)

- Ceramic fuses are typically found in older style homes.
- Identify if any fuse is deactivated.
- Check if there are any fuses currently in the ''Off'' position, take note of them.
- Place a strip of electrical tape over main switch isolator after it is turned ''Off''.
- Apply additional strips of electrical tape over the deactivated fuse and any individual isolator in the ''Off'' position as a reminder to leaving it in the ''Off'' position once the re-activation procedure has been completed.
- If you find a fuse plug out of its socket, whilst the main isolator is in the ''Off'' position, place electrical tape over its respective switch and one over the fuse socket opening.
- DO NOT touch the internal metal fittings.
- Place a written note on the main isolator switch or meter box enclosure to advise the power is ''Off'' and WORK IN PROGRESS is occurring.
- Check to ensure the lights and appliances, within the home, previously left on are no longer operating to confirm the mains power is now isolated.
- The original person who placed the isolation tag is the only one who can re-activate the power. Advise occupants of this requirement.

PROCEDURE FOR ISOLATION CIRCUIT BOARD (IF IN DOUBT YOU MUST CONSULT A LICENSED ELECTRICIAN)

- Circuit boards are typically found in modern homes.
- Check if there are any switches currently in the ''Off'' position, take note of them.
- Place a strip of electrical tape over main switch isolator after it is turned ''Off''.
- Apply additional strips of electrical tape over any deactivated fuses or individual switches in the ''Off'' position after isolating the mains power as a reminder to leave it in the ''Off'' position once the re-activation procedure has been completed.
- Turn ''Off'' all individual switches on the circuit board.
- Place a written note on the switches or meter box enclosure to advise the power is ''Off'' and WORK IN PROGRESS is occurring.
- Check to ensure the lights and appliances within the home previously left on are no longer operating to confirm the mains power is now isolated.
- The originator that placed the isolation tag is the only one who can re-activate the power. Advise occupants of the requirement.

REACTIVATING THE POWER

- After the completion of the installation, switch the mains power to the ''On'' position (for ceramic fuse board), but for a circuit board, switch the main power ''On'' and then each individual power isolator on one at a time. The taped switches in the ''Off'' position should stay switched ''Off''.
- WARNING: If you cannot reconnect power please ensure you seek assistance from a qualified electrician.

SUITABLE CLOTHING

- When handling any insulation material, especially in enclosed poorly ventilated areas and/or overhead, the use of suitable eye protection conforming to AS/NZS 1336 will greatly reduce contact with dust or fibres.
- Wear suitable loose fitting clothes, including long sleeved shirts, long pants, cap and gloves.
- A suitable dust mask is recommended when working in confined, poorly ventilated and dusty areas.
- Wash work clothes separately and rinse the washing machine after use.

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