

## **D.I.Y Under floor Installation Instructions - Air-cell Insulation Blanket**

The Air-cell roll is 1350mm wide x 22.25 metres long.

The pressure sensitive moisture barrier foil tape is 48mm wide x 50 metres long.

Air-cell insulation blanket is stapled to the underside of the flooring joists between the bearers. It performs three tasks:

- Radiant reflector,
- Vapour barrier,
- Thermal barrier,

Achieving full performance in these three areas is dependant on how well it is installed.

Maximum performance will be achieved by ensuring there are no gaps that will allow air or moisture into the cavity between the floor and the top surface of the foil.

### **Safety Issues**

First check the access and work area carefully, removing any sharp items or obstacles ( glass, nails sticking out etc.) and ensure all obstacles (hoses, timber etc) around the access way are removed.

Although the polymer separation with Air-cell provides a 650-750 volt buffer to shock transfer, this can still occur through the staples and gun

**When installing, isolate your-self from the ground and acting as an earth, by lying on a polythene sheet, trampoline safety pad or other such item, particularly if the ground is wet.**

### **Wiring**

Ensure that electric cabling is in safe condition and there is no potential for contact with live wiring.

**Do not staple near wiring, either extend the Air-cell in order to staple away from the wiring or seal with tape if able to safely.**

Mark the path of concealed cables with iridescent spray paint so that electricians etc can easily find them. Red for power cables and blue for water pipes – and do it at the time or you forget where the cables are.

### **FIXING:**

Air-cell can be fixed directly from the roll or in cut pieces. Measure the distance between bearers and if necessary cut a fill in piece allowing a 50-100mm overlap and 50mm turn down along the bearer.

Air-cell can be cut to length with a panel saw while still in the roll.

The foil is fixed to the underside of the flooring joist with standard or stainless steel staples. Stainless is preferred if you are close to a sea air environment.

## **Energy Efficient Products, Services and Consulting**

Negawatt Resources Ltd –PO Box 38 028 Wellington  
Ph 04 939 0313 Fax 04 939 3965 Email [info@nrl.co.nz](mailto:info@nrl.co.nz) Web [www.nrl.co.nz](http://www.nrl.co.nz)  
**Efficiency Showroom: 431 Hutt Rd Petone Wellington**  
Just at the bottom of the Dowse Interchange

The recommended staple leg length is 12mm. Use a trigger gun such as the Rapid 34. Do not use a hammer tracker as they are dangerously inaccurate around wiring and will damage the Air-cell

Start at the most difficult end to do, fixing the foil so that it folds down the wall's bottom plate and bearer.

Ensure you staple the blanket so that it is square to the bearer run. If you do happen to run off line you can cut the foil at a joist and continue more in alignment with the bearers or pull the blanket out of the staples and re-position the length.

Along fold down edges the fixing distance between staples should be no more than 150mm (about the length of the hand gun) and a maximum of 20mm in from the edge of the foil. Stay well away from wires.

If your location is exposed to a regular or high wind loading then the distance between staples should be reduced to 100mm.

The staples should be set to a depth to just indent the foil slightly without compressing the foil up to the timber joist.

Underneath wet areas you can if you wish leave 100 mm of join untaped midway between joists to allow any moisture from accidental overflow to drain, or perforate with a sharp knife where joins are not available.

Penetrations for services must be neatly cut to minimise gaps and airtight sealed with 48 mm wide reinforced foil tape.

Mark paths of underfloor piping or wiring with iridescent spray paint for easy finding by electricians and plumbers. Red for wiring and blue for water.

#### **Overlapping:**

To make up wider widths overlap the edges by 50mm if taping or 150mm if not taping. Our recommendation is that all joins be taped.

#### **Taping:**

The special vapour barrier tape is pressure sensitive and needs to be pressed firmly into place ensuring all undulations in the foil are sealed.

#### **Penetrations Plumbing, electrical etc**

Air-cell can be cut easily with a retractable blade knife and its malleability makes it easily fitted around penetrations. Patch any gaps with off cuts and tape to ensure sealing.

#### **Completion**

A job that looks tidy is usually a job well done. Clean up all scrap, material and plastic leaving only your footprints.

Be aware that there is now nowhere for any embedded floor moisture to escape to except through the house and it may pong for several days as drying takes place so you may need to air the house as much as possible over the next few days to allow the residual moisture and aroma to escape. In winter you may need to heat and ventilate.

#### **Finally**

Congratulate yourself. You will have done the best possible thing to enhance the health, air quality and comfort of the household and to preserve the building. Well done.

### **Energy Efficient Products, Services and Consulting**

Negawatt Resources Ltd -PO Box 38 028 Wellington  
Ph 04 939 0313 Fax 04 939 3965 Email info@nrl.co.nz Web www.nrl.co.nz  
**Efficiency Showroom: 431 Hutt Rd Petone Wellington**  
Just at the bottom of the Dowse Interchange

**ELECTRICAL SAFETY WARNING**  
**⚡ ELECTRIC SHOCK HAZARD ⚡**

- ***Two recent fatal accidents have occurred when homeowners stapled under floor insulation material into power cables***
- ***When stapling under floor thermal insulation it is essential to keep staples well clear of any power cables.***
- ***Damage to such a power cable may result in a fatal electric shock.***
- ***Power isolation when performing the work is encouraged, however it should be noted that turning off the power will not necessarily eliminate the electric shock hazard as a damaged cable may live the aluminium foil when power is turned back on.***
- ***There is also risk of an electrically initiated fire resulting from such a damaged cable.***

***If you have any doubts or concerns about installing this thermal insulation safely then have the work carried out by professional installers.***

***Additional energy safety information can be sought from the Energy Safety Web site:***

**[www.ess.govt.nz](http://www.ess.govt.nz)**

**Or free phone 0508 377 4636**

**Energy Efficient Products, Services and Consulting**

Negawatt Resources Ltd –PO Box 38 028 Wellington  
Ph 04 939 0313 Fax 04 939 3965 Email info@nrl.co.nz Web www.nrl.co.nz  
**Efficiency Showroom: 431 Hutt Rd Petone Wellington**  
Just at the bottom of the Dowse Interchange