

## Building Materials



The choice of building materials can significantly affect the comfort of a home, as well as the budget. There are materials available that can be used for more than one part of the building process. For example a concrete slab can be the foundation of the home, provide insulation and be the flooring. Using certain types of wall and roof building materials can provide high levels of insulation while also being the roof or wall. Using products that do two jobs in one can minimise the environmental impact and the cost of a project. Another thing to consider is the environmental impact of the products we choose. Some have a very high environmental impact, while others are much lower. There are many ways to 'build greener' in your next project.

### ***From the bottom***

If you're building with a concrete slab, go for a high recycled content concrete like Boral's Eco-Crete and use it in conjunction with your preferred insulation (waffle pod or polystyrene). Simply polishing the concrete not only saves the expense of a floor covering, but if placed properly in the home near North facing windows, provides thermal mass to assist with heating and cooling.

Timber floors can be constructed using recycled or sustainably sourced wood. These floors are lightweight and provide for natural finishes. When sanded and finished with a no VOC (Volatile Organic Compounds) sealer the finish is not only beautiful but also does not 'off gas' any chemicals. When constructing timber floors you would benefit from insulating them, generally from underneath using either a polystyrene or foil product. There are several on the market, choose the one that suits your needs and has a low environmental footprint.

### ***Flooring***

When it comes to flooring there are many choices. If you'd like to consider a sustainable option then look for recycled timber, bamboo, coir, sisal, seagrass, hemp, jute or pure wool carpet. Other options include linoleum, cork and of course if you have a concrete slab, there is always polished and sealed concrete. Remember to use no VOC glues and sealers, Livos have a good range of products in this space.

### ***General materials***

Lightweight timber structures have been used for many years. One of the benefits of timber is that it is very adaptive and has the potential to be recycled at the end of the buildings life. It also stores carbon in its production. Ensure that the wood used is sourced from a local source of recycled or sustainably managed forests for minimal environmental impact.

Clay brick is the most common building material used in Australia. These bricks are usually inert, are not prone to off gassing volatile materials and are generally considered non-toxic. Common, standard brick veneer construction is not ideal for mixed climates. However reverse brick veneer (where the brickwork is on the inside) takes advantage of the thermal mass properties and can result in high performing homes with lower energy demands for heating and cooling.

AAC (Autoclaved Aerated Concrete) bricks are a good option. These are bricks made of concrete with lots of closed air pockets in it. They are light weight, energy efficient and provide a reasonable level of insulation (dependent on the product). Products like Hebel use less than 1/3 the energy and resources when manufactured when compared to brick veneer and concrete, and give much higher insulation levels.

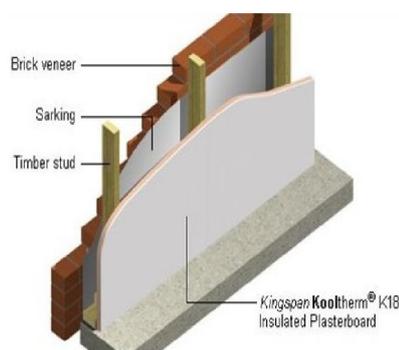
### **Weather Proofing & Insulation**

All external walls should be weather proofed. The standard method is to wrap sarking around the walls before the exterior surface material is applied. There is a new sarking product now available from DCT called Proctor Breathable Membrane that provides excellent weather proofing whilst allowing the building to breathe moisture (but nothing else). This helps to prevent condensation and mould issues. See [www.spec-net.com.au/press/0910/dct\\_220910.htm](http://www.spec-net.com.au/press/0910/dct_220910.htm) for a sample of its use.

Kingspan also have some good products including a high R-value thin insulation and roof panels. See our Insulation tip sheet at [www.greenmoves.com.au/freeinfo](http://www.greenmoves.com.au/freeinfo) for more information on insulation.

### **Wall systems**

One of the ways to minimise building waste is to have walls pre-fabricated and delivered to site. Kingspan ([www.kingspan.com.au](http://www.kingspan.com.au)), SIPS ([www.sipsindustries.com.au](http://www.sipsindustries.com.au)) and Ritek ([www.ritek.net.au](http://www.ritek.net.au)) have a good range of wall and roofing systems which provide good levels of insulation while 'being the wall'. These are made to measure and quickly installed onsite. Prefabricated systems help to minimize building waste and assist with recycling product waste at the source. CSR Superchek and BenexBlock are products also worth considering.



### **Paints**

Low and No VOC paints are growing in range and availability and provide significant benefits to indoor air quality. EcoColour and Livos have a range of No VOC paints; Dulux and Watty have a range of low VOC paints. See Green Painters at [www.greenpainters.com.au](http://www.greenpainters.com.au) for more information and to find a painter who understands the value of 'low/no VOC' paints.

### **Recycled wood and plastic products**

There is a range of recycled plastic and reconstituted timber products available on the market. These are generally manufactured using epoxy or formaldehyde glues. In order to minimise chemical vapours. Choose products that use non-formaldehyde or no VOC glues. Modwood ([www.modwood.com.au](http://www.modwood.com.au)) is a good example of a company taking waste and creating a useful product, and it is an Australian company!

For any queries or additional information on this tip sheet please contact Green Moves Australia on (03) 9024 5515 or 1300 898 742

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