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Readers are advised to seek specific professional advice from Hempcrete Australia relating to their construction project and circumstances before embarking on any construction work.
All care has been taken to guarantee the accuracy of the information. Drawings and models representing technical details are indicative and suggestions only.

Technical support
Please get in touch with us if you require further information - contacts below. The Hempcrete Australia website installers’ login is a rich source of information.

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Hempcrete Australia Pty. Ltd. is based in Maleny on the Sunshine Coast in Queensland.

Hempcrete Australia works with the sustainable building material hempcrete.

Hempcrete Australia exists to help manage hemp-building projects by:

- Providing expertise to potential clients wanting to build with hempcrete. Hempcrete Australia works closely with builders, designers and owners to guarantee that hempcrete is installed professionally and within Australian standards;
- Directing clients to accredited hempcrete installers;
- By training builders and tradespeople to become accredited Hempcrete Australia installers who work with Hempcrete Australia certified products and methods in line with the BCA;
- By supplying the hempcrete materials:
  - INSULCORE - the hemp core
  - INSULIME - the lime binder
  - NATURAL RENDERS - the lime or clay based renders
  - MAGNESIUM BOARD
  - FORMWORK - recyclable lightweight formwork systems
  - MIXERS - durable pan mixers

THANKS TO THE FOLLOWING PEOPLE AND ORGANISATIONS:

- Members who assisted with compilation of this document
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“Hempcrete” is a mixture of plant-based aggregate and binder and is used primarily to provide eco-friendly insulation in buildings. This manual is based on ‘Les Regles Proffesionelles’ from CenC, the Hemp Building Society in France. This guide complies with the French building code for hempcrete installation that is certified by building regulations in France.

The purpose of this document is to define the characteristics and rules for using hempcrete in new constructions and renovations. These have been established on the basis of expert knowledge, and are the result of many technical studies and hempcrete tests together with feedback from the ‘field’ over the past 20 years.

Hempcrete building has gained great respect and momentum in Canada, the United States and Europe, namely France, Switzerland, England and Ireland.

In order to comply with the Building Code of Australia (BCA) any company using the Hempcrete Australia products must have undergone training for Hempcrete Australia accreditation.

To be eligible for Hempcrete Australia product warranty, all building work must comply with BCA standards and requirements.

The installation standards for hempcrete are outlined in this manual which covers the basics of hempcrete building techniques.

This manual is considered a work in progress and we welcome your feedback.
This professional’s guide for working with hempcrete is the second point of reference on the use of hempcrete. This manual is the support document for Hempcrete Australia training.

Hempcrete Australia products are only to be installed by accredited tradespeople and owner builder license holders who have completed the Hempcrete Australia training provided. This is specified in the BCA certification of the product.

THE PROPER USE OF MATERIALS

Use of materials as stipulated in this manual is relevant only to Hempcrete Australia products, namely Insulcore and Insulime binder.

Insulcore and Insulime binder meet two requirements:

1. Compatibility between the binder and the hemp aggregate; and
2. The performance threshold required for each application: the supplier’s instructions (materials, dosage, application) achieve the required performance threshold for each different application type i.e. wall, floor, ceiling and render. These requirements are validated by tests conducted by independent laboratories.
Introduction

SUSTAINABILITY AND THE ENVIRONMENT

The following information is taken from two websites about sustainability and the environment in relation to the building industry. It explains how hempcrete fits perfectly as an appropriate sustainable building product.

Hempcrete and the environment


Approximately 13% of Australia’s energy consumption and 10% of its greenhouse gas emissions come from Australia’s eight million homes.

Australia is expecting a growth in both the number and size of homes and energy use, with an estimated increase of over 55% of energy use in Australian homes between 1990 and 2020. That means our use of gas, fuel and power usage in our homes is still increasing.

To change this incline in energy use, builders and designers are working increasingly to adapt the designs of new build and renovations. Builders and designers are looking at ways to work with nature rather than against it, at ways that will benefit our environment rather than contribute to its problems.

The energy efficiency provisions for housing (Class 1 buildings and certain Class 10 buildings and structures) are contained in the National Construction Code Volume Two – Building Code of Australia (BCA). The objective of the provisions is to reduce greenhouse gas emissions.

Since BCA 2010, new housing has had to achieve a minimum energy rating of 6-stars or equivalent. The provisions take into account the:

- External glazing and shading;
- Performance of the building fabric;
- Sealing of the building;
- Effects of air movement; and
- Performance of the building’s domestic services, including hot water supply, insulation and sealing of ductwork and central heating water piping, space heating, artificial lighting, and the heating and pumping of swimming pools and spas.

The required level of thermal performance for housing can be achieved by:

- Complying with the relevant elemental Deemed-to-Satisfy Provisions; or
- Reducing the heating or cooling loads (verified by energy rating software), and complying with specific energy-saving features such as the testing and installation of insulation, thermal breaks, compensation for downlights, floor edge insulation and building sealing.

Guidelines for reducing embodied energy

From www.yourhome.gov.au

Lightweight building construction such as timber frame is usually lower in embodied energy than heavyweight construction. However, this does not necessarily apply if large amounts of light but high-energy materials such as steel or aluminum are used.

There are many situations where a lightweight building material is most appropriate and this may result in the lowest lifecycle energy use e.g. in hot, humid climates, on sloping or shaded sites or in sensitive landscapes.

In climates with greater heating and cooling requirements and significant day/night temperature variations, embodied energy in a high level of well insulated thermal mass can significantly offset the energy used for heating and cooling.

There is little benefit in building a house with high embodied energy in the thermal mass or other elements of the envelope in regions where heating and cooling requirements are minimal or where other passive design principles are not applied.
Introduction

Each design should select the best combination for its application based on climate, transport distances, availability of materials and budget, balanced against known embodied energy content.

Guidelines for reducing embodied energy:

- Design for long life and adaptability, using durable low maintenance materials.
- Ensure materials can be easily separated.
- Avoid building a bigger house than you need. This will save materials.
- Modify or refurbish instead of demolishing or adding.
- Ensure materials from demolition of existing buildings, and construction wastes are reused or recycled.
- Use locally sourced materials (including materials salvaged on site) to reduce transport.
- Select low embodied energy materials (which may include materials with a high recycled content) preferably based on supplier-specific data.
- Avoid wasteful material use.
- Specify standard sizes, don’t use energy intensive materials as fillers.
- Ensure off-cuts are recycled and avoid redundant structure etc. Some very energy intensive finishes such as paints, often have high wastage levels.
- Select materials that can be re-used or recycled easily at the end of their lives using existing recycling systems.
- Give preference to materials manufactured using renewable energy sources.
- Use efficient building envelope design and fittings to minimize materials e.g. an energy efficient building envelope can downsize or eliminate the need for heaters and coolers, water-efficient taps allow downsizing of water pipes.
- Ask suppliers for information on their products and share this information.
Hempcrete Australia

Thanks to the following people and organisations

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This is a preview from the Hempcrete Australia Installation Manual 3rd Edition.

For the full version please contact Hempcrete Australia to register for the training course, or to gain further information and technical support.

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