

Hempcrete Modular Panels

Building a Sustainable and Affordable Future for Australia

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Hempcrete is a bio-composite material made of the woody core of the hemp plant, a lime-based binder, and water. Its distinct properties position it as an excellent choice for sustainable construction.

The use of hempcrete in modular panels amplifies its benefits by enabling scalable production, rapid assembly, and the development of affordable housing solutions. Modular hempcrete panels are structural, lightweight, and designed for ease of construction, making them a practical solution for a wide range of building applications.

As the construction industry faces increasing pressure to innovate and contribute to Australia's carbon emissions reduction targets, hempcrete panels emerge as a forward-thinking alternative to support more sustainable building practices. The use of hempcrete is rapidly expanding in the EU and the USA, where modular systems are now well advanced.

Hempcrete can...

- **Sequester carbon (CO₂)** during the hemp plant's growth and continues capturing it over time after being used in construction.
- **Be fire, pest, and mould resistant**, ensuring long-term performance.
- **Have a high thermal insulation rating**, reducing heating and cooling costs.
- **Support low toxicity and natural humidity regulation**, promoting healthy indoor environments.



Benefits include...

Positive Environmental Impact

Hempcrete stores up to 165 kg of CO₂ per cubic metre, significantly outperforming traditional materials like concrete.

The hemp plant regenerates soil, requires minimal water, and is ready for use after growing up to 4 metres in just 14 weeks.

Addressing Australia's Housing Supply Crisis with Circular Economy

Hemp offers a relatively rapid renewable input for Australia's construction industry that can enhance its circular economy capacity. Modular hempcrete panels share key advantages with traditional alternatives, such as scalable manufacturing and rapid assembly, which can reduce labour costs. While hempcrete is not a new material, its affordability has improved significantly with the introduction of modular construction. Hempcrete panels stand out by also offering a transformative advantage of sustainability, establishing them as a foundation for eco-friendly construction.

The adoption of hempcrete panels aligns seamlessly with the Federal Government's National Housing Accord target of building one million homes by 2029 sustainably and affordably. It also aligns with State government initiatives aimed at promoting modular housing.

Supply Chain Opportunities

Cultivating industrial hemp supports Australian farmers by providing a fast-growing crop and a valuable alternative in crop rotation.

Establishing panel production facilities can create local green jobs, reduce import reliance, and position Australia as a global hempcrete manufacturing and innovation leader.

Consumer Benefits: Energy Efficiency

Hempcrete homes use up to 70% less energy for heating and cooling than traditional homes, translating to significant cost savings for occupants.

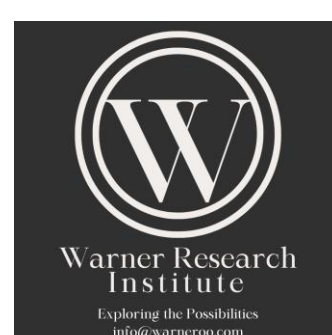
Community Benefits: Enhancing Resilience

Hempcrete's fire-resistant properties make it ideal for bushfire-prone areas, addressing key housing safety concerns.

The hempcrete panel supply chain also offers opportunities to revitalise regional economies, supporting their transition to more sustainable economic structures.



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Supporting Australia's Carbon Targets

Adopting hempcrete can significantly support Australia's commitment to achieving net-zero emissions by 2050. By replacing traditional high-carbon materials with hempcrete in residential construction, the nation can significantly reduce emissions from the construction sector, which accounts for approximately 38% of the country's total carbon emissions.

Given the steady progress towards zero carbon emissions, hempcrete stands out as one of the few advanced materials that align with future building standards.

Why Hempcrete Panels Matter Now

The Australian construction industry is at a pivotal moment, with increasing pressures to innovate by adopting sustainable materials and practices while addressing increased input costs and housing affordability.

Hempcrete panels provide a reliable, efficient and sustainable opportunity to meet these challenges, fostering a greener, more affordable future for Australian communities.

Australia has a unique opportunity not only to expand its domestic production of hemp products and reduce reliance on imports but also to position itself as a global leader in the production and use of hemp-based materials.

Next Steps

To fully develop the hempcrete industry in Australia within the next 5 to 7 years, targeted initiatives are essential to establish a sustainable and scalable supply chain. The focus must be on key initiatives such as increasing production capacity, fostering regulatory support, and promoting public awareness, for hempcrete to become a mainstream building material, contributing to economic development and environmental goals.

Key Actions for Growth

1. **Invest in Infrastructure:** Establishing local decortication plants and production facilities will support the scalability of hempcrete panel manufacturing, reducing costs and improving availability.
2. **Standardisation and Certification:** Developing national standards for hempcrete panels and incorporating them into the National Construction Code will facilitate their adoption across construction projects.
3. **Support Local Agriculture:** Encouraging hemp cultivation will secure a sustainable local supply chain, benefiting Australian farmers and reducing reliance on imports.
4. **Government Support and Incentives:** Federal, State, and local governments are pivotal in driving the hempcrete panel industry's growth. Key actions include supporting further research and development initiatives and exploring the integration of hempcrete panels into modular housing programs. Local governments can promote regional sustainable development by incorporating hempcrete panels into local housing and community projects, fostering economic growth and environmental benefits, while also reducing ongoing energy costs related to property usage in the community.
5. **Industry Collaboration:** Strengthening collaboration across the hempcrete value chain—from farmers to processors to construction companies—will ensure a cohesive and efficient supply chain.
6. **Awareness and Stakeholder Engagement:** Coordinated industry action to build awareness and foster stakeholder engagement—including builders, developers, regulators, and the public—will increase the adoption of hempcrete panels. Additionally, exploring carbon credits as part of the production process could provide valuable financial incentives, driving further investment and industry growth.

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