


# Building The Future With Hempcrete

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One may be inclined to believe that there is a limit to how useful a plant can be. After all, it's just a plant, right? Well, the humble hemp would surprise anyone who thinks along those lines, and pleasantly so.

Hemp is one of the most versatile materials on the planet. History has seen it used as paper, rope and even in construction. It is believed that the pyramids, wonders of the ancient world that we marvel at even in the 21<sup>st</sup> century, are built of a biocomposite of hemp and lime; as it petrifies over time, such a compound would have the required flexibility and strength to survive harsh weather conditions for such long durations.

Harking back to the wisdom of the ancients, the modern construction industry has been quick to adopt the benefits of hemp as a construction material. High in material strength and the ability to withstand extreme conditions, hemp is fast becoming one of the choicest substances for engineers and the construction industry. Hempcrete, a biocomposite of hemp and lime, is already bringing in a silent but sure revolution in the industry.



As mentioned above, Hempcrete is a biocomposite of hemp *hurd* or *shiv* together with lime. The mixture is prepared by combining the above components with suitable quantities of water. The lime acts as a binder that coats the hemp particles and, once it reacts with the water, the lime glues the hemp particles together to provide a high material strength. Any excess moisture is removed from the blend. The resultant residue is Hempcrete.

By altering the proportions of the ingredients, Hempcrete can be produced which has varied structural, thermal and moisture-absorbent capacities. Each variant is suitable for construction of different structural components and insulation.

So now that we know about what Hempcrete is made of, let's take a look at the many advantages of building with hemp.

### *Naturally Sourced Material*



Hemp is entirely organic and does not involve any synthetic components. As a result, the Hempcrete produced from hemp is naturally sourced and does not require a large amount of energy during production. This makes the material environment-friendly. Compared to Hempcrete, traditional construction materials have a large carbon footprint which is undoubtedly a cause of concern for the planet.

### ***Low Maintenance***



Hempcrete is a considerably dense material when compared to conventional insulating substances. Therefore, the use of Hempcrete helps to reinforce the structural capacity of the constructional framework. Further, it also provides an excellent surface for plaster finishes.

### ***Highly Carbon Absorbent***

Hemp is a high carbon absorbent plant, a property which is imparted to Hempcrete. Hempcrete sequesters almost 100 kilograms of carbon for every cubic meter of the material. This is huge when compared to conventional construction materials which themselves contribute towards carbon emission in their manufacturing processes.

### ***Excellent In Handling Moisture***

Due to its porous nature, Hempcrete can store a large amount of moisture without causing any damage to the structural integrity of the building. The plant fibers have a large amount of internal surface area which makes for the storage of a significant amount of moisture. The material is also capable of releasing the moisture once the conditions are favorable.



Perhaps the most definitive feature of Hempcrete is its resilience to common problems faced by building materials. Hempcrete is highly flame-resistant; this lends buildings constructed with Hempcrete an inherent fire-proofing that is built into the very walls of the structure. Further, as it uses a lime binder, Hempcrete is extremely resistant to fungus, and also has anti-microbial properties. This means that Hempcrete can resist the formation of mold in even highly humid conditions.

### *Insulation Properties*

As it is antifungal, antimicrobial and moisture absorbent, Hempcrete works great as insulation in both hot and cold climates. Its high resilience to moisture makes the material suitable for use in extremely humid climates where normal insulation materials fail to do the job. Also, Hempcrete has excellent soundproofing properties that make it an ideal candidate for blocking out external noise.

### *Lightweight*

Hempcrete is very lightweight, and hence lends ease and efficiency to the construction process. It can be easily transported even to large heights. This makes it ideal for use in tall constructions, roofs, and lofts as well.

### *Non-Toxic And Recyclable*