Hempcrete Properties

Listed below are the basic material properties:

- **Density:** 5.9 to 8.6 lbs/cf
- **Compressive strength:** 116 to 145 pounds per square inch (PSI)
- **Flexural strength:** 44 to 58 PSI
- **Fire rating:** approximately 1 hour per 4” of thickness
- **R-Value:** 2.4 - 3 per inch thickness available
- **Air permeability:** $1.0 \times 10^{-6}$ PSI
- **Vapor permeability:** $3.4 \times 10^{-5}$ PSI
- **Carbon capture:** 7 lbs/cf
- **Achievable air tightness:** <1.1 cubic feet per minute
- **Acoustic absorption:** 0.69 noise reduction coefficient (NRC)

**Hempcrete Material**

Hempcrete is a lightweight bio-composite building material made from industrial hemp stalks, a lime based binder, and water.

- **Aggregate:** Hemp hurd (the inside woody core of the hemp plant)
- **Binder:** hydrated air lime blended with selected cementitious, hydraulic and inorganic materials.
- **Water:** for mixing and curing

**Hempcrete Benefits**

The use of Hempcrete as a building material can have the following benefits:

- Non-toxic
- No off-gassing
- No solvents
- Mold and rot resistance
- High vapor permeability
- Humidity control
- Durable
- Sustainable
- Carbon sequestration
- Fire and pest resistance
- Passive self-regulation of temperature and humidity

All of our team members are committed to building with hemp and lime, and have multiple years in construction.

**Hemp Technologies Team**

- **Andrea Hermann**
  Industry Liaison
  Business Development

- **Greg Flavall**
  Technical Director
  Project Manager

- **Joy Beckerman**
  Instructor
  Hemp Ace International
  [www.HempAce.com](http://www.HempAce.com)

- **Brandon Cochran**
  Hempcrete Instructor
  HempWorks

**Hempcrete Materials & Design**


**Materials Supplier**

- Architectural Design
- Structural Engineering
- Construction Assistance
- Project Management

Proud members of:

- The Hemp Industries Association
- The Canadian Hemp Trade Alliance
- International Hemp Building Association

[Hemp Technologies](http://www.Hemp-Technologies.com)
Hempcrete can benefit the environment and create a healthy structure in many ways including:

Environmental Benefits:
- Non-toxic
- Sustainable
- Renewable
- Carbon sequestration
- Reduction of carbon dioxide emissions
- Low energy building product
- Reusable

Healthy Structure:
- Good vapor permeability (capillarity and hygroscopicity)
- Naturally provides a healthy internal environment
- Thermal comfort

Material Benefits:
- Good thermal performance (insulation and mass)
- Inherently air-tight material
- Energy efficiency
- Reduced heating and cooling requirements
- Low maintenance
- Multiple finish options

The hemp plant has been used for thousands of years for various trades, including rope making, ship sails, oils, textiles, paper, and construction materials. While it doesn't have structural properties by itself, hempcrete can enhance the structural components of a structure in a multitude of ways.

Structural:
- Can be used in load bearing applications with an integrated timber, steel, or concrete frame
- Provides racking/shear strength
- Can stiffen structural frames
- Can allow for increased spacing of structural members

General Information:
- Easy to handle and install
- Monolithic product
- Material costs: approximately $12 CF

Uses:
- Pre-cast blocks
- Cast-in-place walls
- Spray applied for in-fill of floor, wall, roof cavities
- Retrofit existing conditions
- Non-load bearing or infill conditions
- Load bearing with integrated structural frame
- Above ground/daylight walls

Benefits:
- Energy and thermally efficient
- Breathable insulating layers
- Vapor permeability
- Mold, rot, fire and pest resistant
- Acoustic insulating properties
- Easy to handle and install

www.Hemp-Technologies.com