

Lime Green Hemp Binder

19/7/23

Specially designed for hemp construction methods, using 20% recycled content. The tried and tested formula made in the UK with British lime for better-than-zero carbon building.

Variants

Hemp Binder Spray	for spraying through suitable machinery
Hemp Binder Hand-Cast	for hand placing behind a shutter

Packaging and storage

Packed in 20kg paper valve sacks. Store in a cool, dry place and use within 3 months. Paper sacks are marked on the side with the type.

Usage

Work in temperatures of 5°C and above, avoid driving rain and frosty weather.

Cast walls

Mix one 20kg bag of Hemp Binder Hand-Cast with 10kg of hemp shiv (which is ½ of a standard bale of hemp). Add approximately 30 to 40 litres of water. To make 1m³ of hempcrete you will need approximately 5 bales of hemp and 10 bags of Hemp Binder.

Hempcrete can be mixed in a forced action pan mixer or a drum mixer.

- Forced action pan mixer: Add the hemp first, start the mixer then add the binder. Once all the binder has been added and coated the hemp, pour in the water and mix until consistent.
- Drum mixer: mixers with an adjustable angle wheel are recommended. Add the water first, then the binder and allow to mix, before adding the hemp. Mix for the shortest time possible to achieve a consistent mix, lowering the drum angle down as soon as all the ingredients are in.

Place the mix in the shuttering in layers of around 150mm, lightly tamping as you go. Do not over compact.

Sprayed Hempcrete

Mix: 20kg of Hemp Binder Spray grade with ½ a bale of hemp (10 kg or approx. 100 litres). Water addition and mixing will depend on the machinery used and trials or manufacturers advice should be sought before commencing.

Typical characteristics:

Compressive Strength: 0.3N/mm² +

Density: 350 to 450 kg/ m³ depending on compaction

Thermal Conductivity: 0.07 to 0.12W/mK depending on compaction (0% moisture)

Take special care with detailing around windowsills, eaves and other junctions to avoid rain penetration. Allow the hemp to dry well before rendering or plastering, this will vary depending on temperature, wall thickness and weather conditions.

Product Data

Further information

The mix is non-structural so a timber frame will normally be used to carry loads when building. When used for renovating and insulating old walls the hempcrete must be placed in such a way that it is suitably tied into the original building, normally using mechanical fixings to help tie the mix in (Ejot STR-H1 Eco for example)

Avoid placing the hempcrete too thinly over building elements that offer little adhesion (e.g. timber studs, plastic conduits). A minimum of 50mm coverage is required in any circumstance, and for double studs at least 70mm coverage is required.

When renovating solid masonry walls internally consider methods of moisture control; external walls should be in good condition and vapour open. Further information is available in BS5250.

Finishing

Walls should be prepared to a good quality of finish with a light texture

Internally

Use a nail float to straighten the hempcrete if necessary and coat with approximately 10mm of Lime Green Solo. Reinforcement mesh is not always required but can be useful around lintels and to improve impact resistance.

Externally

Use a nail float to straighten the wall and remove high spots as necessary. Render in 2 coats:

- Lime Green Duro, applied 10mm thick with 910 reinforcement mesh in the middle with a 10% overlap. Straighten and float to a lightly texture surface. Leave approx. 10 days to cure.
- Apply a coat of Lime Green Silicate Render at 2 to 3mm thick for a breathable, water repellent finish.
- In areas of Very Severe wind driven rain according to the British Standard, a drained ventilated cavity should be formed instead of direct render application.

Composition

Lime Green Hemp Binder is blended in the UK using CL90 air lime, secondary waste mortar, chalk and Cem I 52.5.

Information is for guidance only, follow relevant codes and regulations. Detailed information on building with hemp is available in specialist books and training courses.