

Hemcrete[®] Thermal Block Information Sheet

1.0 Introduction

Hemcrete[®] Thermal blocks have been developed to provide high insulation. In addition they also have a negative carbon footprint (i.e. they lock up carbon).

2.0 Technical Data

Average density	530 Kg/m ³
Weight	Approx 5 Kg
Thickness	100mm
Height	215mm
Length	440mm
Thermal conductivity	0.11W/m. K



3.0 Storage

The blocks should be stored on a dry level surface, and should be covered to protect them from severe weather. On uneven ground and on site, stacking should normally be restricted to two pallets high.

4.0 Block Laying

- A regular bond pattern should be maintained, based on a minimum overlap of a quarter of a block.
- Lintels should bear on to full blocks, wherever possible.
- Cut blocks should always be used for irregular and non-standard spaces; bricks, mortars or other dissimilar material should never be used.
- Blocks should be laid on a full bed of mortar.
- Block work should be protected from adverse weather during, and immediately after laying.
- Limetec Moderately and Eminently Hydraulic Lime Mortars are recommended.
- Blocks should be laid in accordance with the current BS code of Practice for blockwork.

5.0 Cutting and drilling

Hemcrete[®] thermal blocks can be easily cut with hand tools. Holes can be made with a normal drill.

6.0 Thermal Insulation

Hemcrete[®] blocks are unusual in offering a good balance between thermal conductivity and thermal inertia.

This gives them an extremely good performance in dynamic situations. 250mm of Hemcrete has been shown to completely dampen a sinusoidal change in external temperature of 20°C to 0°C over a 24hr cycle.

7.0 Carbon Sequestration

When hemp grows it takes in CO₂ and converts it into glucose, cellulose, hemi-cellulose and lignin. The CO₂ molecule is broken down, with the carbon locked up in the plant and the oxygen given back to the atmosphere. It takes 1.84kg of CO₂ to make each kg of dry hemp. Each kilogramme of Hemcrete® has carbon trapped within it equivalent to 330g of CO₂. (Approx 170kg/cubic metre)

8.0 Fixing

For light weight fixings (up to 10 kg) normal wood screws with rawl plugs) can be used. The screws should penetrate the block to a minimum depth of 50 mm (allowance must be made for the thickness of the internal finish as well as the item to be fixed).

Medium weight items (up to 40kg) should be fixed using resin fixings.

Heavier items should be self supporting or fixed back to the building structure.

As a general rule, fixings should not be closer to the free edge of the block than the depth of the fixing penetration, nor should they be over-tightened as this can affect the pull out strength.

9.0 Finishes:

Lime Technology's Baunit render and plaster products are recommended by the manufacturers for external and internal finishes. They meet the physical and biological demands of the built environment.

(Technical information is available on this product on request)

10.0 Sound Insulation:

Following factors contribute in achieving good sound insulation:

- Careful design
- Separating wall construction
- Associated structure
- Proper site practice

Deficiency in just one part can adversely affect the overall performance. The most common fault is poor workmanship.

It is suggested that the designer always follow these principles when developing design details:

- Wherever possible, rooms either side of a separating wall should have similar uses.
- Ideally services should not pass through or be chased into separating walls
- Mechanical equipment should never be mounted on a separating wall, unless fixed on acoustic mountings.
- In the design of the structure, sound transmission can be reduced if:
 - a) the floor slab supporting the separating party wall is not continuous,
 - b) wall ties in cavity separating walls are omitted if they are not required structurally.

