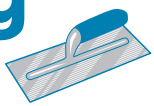
hempire

Building Plaster



READY MIXED HEMP LIME ECOPLASTER TECHNICAL DATA SHEET

Hempire Building Plaster is a unique ready mixed plaster made from the chopped stem of the industrial hemp plant and reacted with lime and pozzolan in a novel process. This process enables rapid drying and hardening making it compatible with both modern and traditional building methods. It is made from sustainable materials sourced entirely from the British Isles and has been designed specifically for use in zero carbon buildings.

VERY EASY TO APPLY
HARDENS FASTER THAN TRADITIONAL LIME BASED PLASTERS
LOW SLUMP
NO ONSITE MIXING/ PREPARATION REQUIRED
CAN BE APPLIED TO STILL WET WALLS
IMPROVES ACOUSTIC PROPERTIES
HIGH THERMAL INERTIA
HELPS REGULATE INTERIOR AMBIENT AIR QUALITY
GOOD VAPOUR PERMEABILITY
GOOD FLEXIBILITY & ABILITY TO SELF HEAL
FIRE AND PEST RESISTANT
SIGNIFICANTLY LOWERS CO2 EMISSIONS
HELPS KEEP BUILDINGS AIRTIGHT

Performance

Studies have shown that for a typical house built with conventional materials, each square metre of walling accounts for 200kgs of emitted CO2 and this means that up to 40 tonnes of CO2 can be released from just the construction of the walls. The builder using Hempire™ Building Plaster to finish internal and external walls makes a significant conribution to combating global warming by reducing the amount of CO2 released into the atmosphere. Furthermore, the additional thermal insulation of the plaster makes the building more energy efficient, and hence reduces operating/utility expenses. In summer the plaster's unique properties help keep the building cool and comfortable, reducing the need for air conditioning.

Characteristics

APPLICATION: The plaster is suitable for backing coats, finish coats, and for external rendering
SHELF LIFE: Use within 3 months of purchase
COVERAGE: 20kg covers approximately 1.4 m^2 if applied at a thickness of 10mm
20kg covers approximately 0.61m^2 applied at a thickness of 25mm
CONTAINERS: 20kg bags, 21kg tubs, 1000kg dumpy bags with plastic bale liners

Handling, Storage & Disposal of Waste

The wet plaster has a high pH of 12.4, so avoid contact with skin and eyes, using barrier cream if necessary. In case of contact with eyes or skin, wash with clean running water and seek medical advice if discomfort persists.
The packaging is sufficient to protect the product but once opened the product should be protected from getting wet/ drying out. Empty packaging and residues of plaster must be disposed of inaccordance with local and national legislation at licensed waste facilities.

PROVISIONAL RESULTS

Our results are to be confirmed by independent testing at the Building Research Establishment (BRE) and the Civil Engineering Department of the University of Kingston in Surrey, results due late 2008

Working Characteristics

Hempire™ Building Plaster has been formulated for ease of application. Different plasterers appreciate different levels of workability, so as supplied the consistency is a little dryer than some plasterers like. If a wetter consistency is preferred, additional water can be added and mixed into the plaster, but care must be taken since wetter plaster can have a slower hardening rate.

The plaster incorporates natural fibres and there is a limited but intrinsic variablilty in working characteristics. Hempire™ Building Plaster is manufactured to a high Quality Standard aimed at ensuring products are as consistent as possible. Minor variations in working characteristics are normal, and should not be a cause for concern.

Drying Time

Typically less than 24 hours, but may vary depending upon substrate type and ambient air conditions.

Our tests have shown it to be hard within 24 hours when applied at a thickness of 5-7mm onto brickwork onto interior walls with an air temperature of 20ºC. Onto non permeable substrates such as vitrified ceramic drying times can extend up to 4 days. Note that the plaster hardens well before the plaster is fully dry, and depending on your application such as adding finish coats, the surface can be worked on before fully dried.

Porosity

Once fully dried, the porosity is typically in the range of 55-60% depending on drying conditions and thickness. This imparts an improved insulation & acoustic isolation properties! It also allows the plastered finish to absorb atmospheric moisture when humitiy is high, and release it when the air is dry. Hempire Building Plaster helps regulate ambient air quality, and imparts a nice warm feel to the plaster.

Structural Weight

Hempire™ Building Plaster is lightweight, and typically weighs 3.65kg per m^2 at a thickness of 5mm.

Fire Resistance

Our tests indicate that surfaces exposed to a naked flame will char, but will not sustain the fire once the flames have been removed. Formal Fire testing is planned at the BRE.

Water Resistance

Hardening takes place through accelerated carbonation of the lime component of the plaster, and as a result the plaster remains hard when wet.

CO2 uptake

An additional positive aspect of the plaster's curing process is that during hardening the plaster absobs up to 0.66kg of atmospheric CO2 per m^2 of 10mm thickness. This is additional to the CO2 encapsulated by the hemp component of the plaster.

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