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RENObAT

Hemp and lime half-timbering, shuttering and timber frame, in restoration

Shuttering is the realization of a vertical wall, by pouring a blend of binder and aggregate. This technique is perfectly suited for filling timber frame houses. It can also be used for outside walls insulation.

The solution of hemp and lime shuttering is interested for insulation but also for safety because the materials are healthy and natural. They contribute to the comfort of houses.

Mix design

Mixing machine:

- Introduce the water into the mixing machine, then the lime.
- Mix until homogeneity and pour the hemp into the mixing machine.
- Mix 3 to 5 minutes until the obtaining of a perfectly homogeneous mixture and without lump or ball. When the concrete is ready, bring it out immediately of the mixing machine.

Mixer with vertical axis:

- Introduce the decompressed hemp and the lime then mix.
- Then pour the water and mix until obtaining the final consistency, 3 to 5 minutes

Preparation of the substrate

IN HALF TIMBERING

- Put a brace lath or a slate batten in the middle of the half-timbering. The ideal spacing between wooden pieces is of 60cm. beyond, plan to slide, in the middle, a rafter.
- Put an entire framework on one side and a framework from 60cm to 1m on the other side by which will be made the filling.
- Leave enough space between the skeleton and the frameworks themselves (use a nail). The minimum width of the shuttering will be of 23cm.
- Think of leaving a wall pocket from 15 to 20 mm outside for the realization of the finishing plasters

IN SHUTTERED WALLS

- Put different pieces of wood, which will be flooded in the concrete shuttering.
- Insert the pipe ducts into the framework before the concrete pouring
- Put an entire framework on one side and a framework from 60cm to 1m on the other side by which will be made the filling. Leave enough space between the skeleton and the frameworks themselves (use a nail). The minimum width of the shuttering will be of 10cm.
- Think of leaving a wall pocket from 15 to 20mm, if the mortar has to be covered with a plaster after striking the form.

Application

- The hemp and lime mortar will be set up by successive layers from 15 to 20 cm
- Compress the mortar regularly with a comb (do not forget to well compress the edges of the frameworks and of the slate battens)
- When the first framework is filled, fix the second height of framework and continue the filling.
- The difficult parts of access or situated under the ceiling will be filled manually. Only one framework will be placed on the opposite site.
- Strip one side the day after the filling and strip completely 3 or 4 days after the application
- Wait approximately 2 months in summer and 3 in winter before applying the finishing.

Indicated quantities

i.pro RENObAT	2 bags of 35 kg	1 bale of 200L of hemp	Around 80 to 88 L of water
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Indicated consumption

For 1 m³ total work

i.pro RENObAT	12 bags	1.2 m ³ of hemp
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Why use a hemp and natural hydraulic lime mortar?

- Extremely soft and strong in the same time, both materials don't break, deteriorate neither; unlike artificial binders with sands
- The deformability of a hemp and lime mortar is rather amazing (4 to 8% for only 0.05% for a cement mortar), which allows to avoid cracks.
- Houses or buildings covered by hemp and lime mortars are warm and cosy. A wall realized with both natural materials, covered by plaster, is not only phonic insulated but also thermal insulated, especially in the winter.

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