

HEMP AND LIME CONCRETE



Why and how
do we need to develop
the uses of hemp concrete

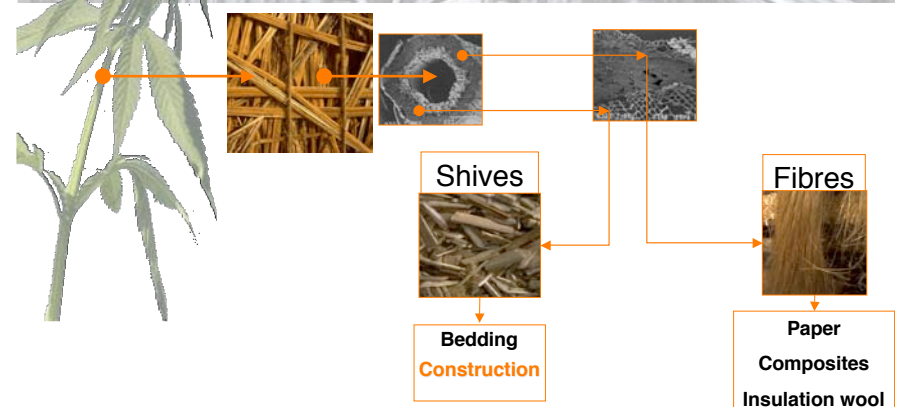
HEMP AND LIME CONCRETE



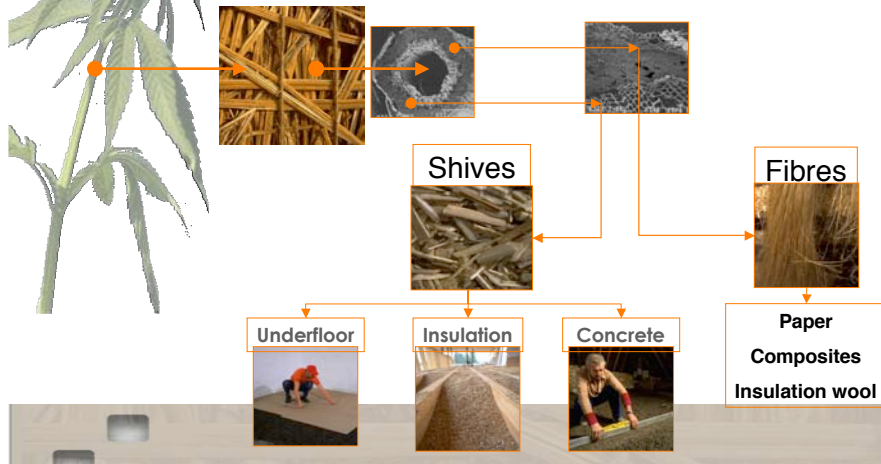
- *Why does the hemp channel need hemp concrete ?*
- *Information about hemp and lime concrete :*
 - The characteristics of hemp and lime concrete
 - The uses of hemp and lime concrete
 - The environmental qualities
- *How to develop hemp and lime concrete ?*
 - The impediments to development
 - The new developments
 - The respect of the technical obligations
 - The organisation of the market



*Why does
the hemp channel
need hemp concrete*



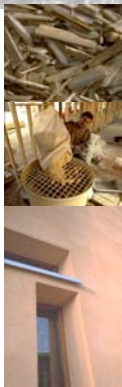
Why does the hemp channel need hemp concrete ?



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Some information about hemp and lime concrete

The Interest of Hemp and Lime Concrete



Concrete and Mortar

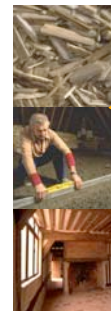


Mixed with lime, shives make light or extra-light concrete with good thermal qualities.

- Density : 300 to 450 kg/m³
- Heat conductivity : $\lambda = 0.08$ to 0.12 W/m.K
- Water vapour permeance
- Acoustic qualities
- Hydrothermal quality

One of the best light concrete on the market

2. Shives : concrete and mortar

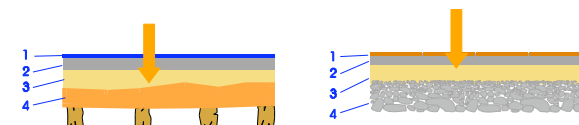


Mixed with lime, it makes a light or extra-light concrete with good thermal qualities.

1. Hemp used
2. Shives
3. Fibres
4. Prospects

Many uses :

- **Screeds** : especially for renovating floors, but also to insulate the ground.



2. Shives : concrete and mortar



Mixed with lime, it makes a light or extra-light concrete with good thermal qualities.

Many uses :

• **Screeds**

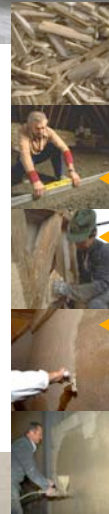
• **Walls** : filling-up and insulation, especially for constructions with wooden frames
Particularly adapted for the renovation of half-timbered houses

**Thermic requirements : Brick 37 cm
Hemp concrete : 24 cm**



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2. Shives : concrete and mortar



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Many uses :

• **Screeds**

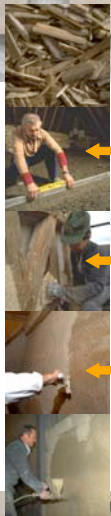
• **Walls**

• **Plastering** : for thermal and acoustic improvements

- Wall temperature
- Regulation of hygrometry
- Possibility of very big layers (> 10 cm)
- Decoration

1. Hemp used
2. Shives
3. Fibres
4. Prospects

The Interest of Hemp and Lime Concrete



Many uses :

• **Slabs**

• **Walls**

• **Plastering and rendering**



The Interest of Hemp and Lime Concrete



Environmental qualities :

• **THE PRODUCT**

Hemp Qualities

+

Hydrated Lime Qualities

- Energy consumption
- CO₂

The Interest of Hemp and Lime Concrete



Environmental qualities :

• THE BUILDING LIFE

Building : 40% of national energy consumption
– 20% for the construction
– 80% for the building life

a lower comfort temperature level ?



a very important economy of energy

How to develop hemp and lime concrete ?



- *Certification and insurance*
 - Two programmes in progress
- *Training*
- *Construction techniques*
 - *Projection.*
 - *Hemp and Lime Blocks : EUREKA program.*

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How to develop hemp and lime concrete

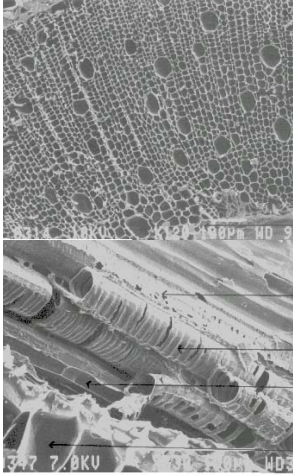
How to develop hemp and lime concrete ?



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other
conditions

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How to develop hemp and lime concrete ?



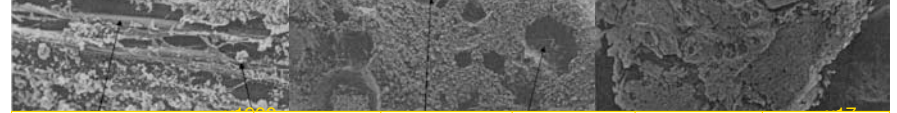
Technical conditions

The problem of hemp concrete : water

- Water absorption of shives : 300/400%
- Random results with hydraulic binders

Hydrated-lime (CL) must be used
in combination with materials which facilitate the drying process.

How to develop hemp and lime concrete ?



Technical conditions

	Masse Volumique apparente Kg/m ³	Compressive Strength MPa (90 jrs)	Durability Norme NF B10-513 Nb de Cycles	Water Vapour Permeance (1cm) g/m ² .h.mmHg	Thermal Conductivity λ W/(m.K)
Natural Hydraulic Lime NHL 2	476	0.46	2	3.400	0.097
Natural Hydraulic Lime NHL 3.5	563	0.16	< 2	2.510	0.154
Natural Hydraulic Lime NHL Z 5	540	0.52	< 2	1.212	0.105
Tradical 70	495	1.46	20	0.743	0.132

Tradical 70 is a patented hemp concrete binder.

How to develop hemp and lime concrete ?

Market conditions

The organisation of the market

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Thank you for
your attention