Options for Farm Business to Diversify with Hemp

How to get hemp products approved for construction use

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TECHNOLOGICAL UNIVERSITY DUBLIN

Liam Donohoe
Bí-Eco - Building Insulation – Energy Consultancy
Director - IHBA
Board member - HCI
Research Committee Member

Assistant Lecturer, PhD Researcher - TU-Dublin
Co-Founder - Black Mountain Insulation Ltd

bí-eco
building insulation - energy consultancy

HEMP COOPERATIVE IRELAND — EST. 2018

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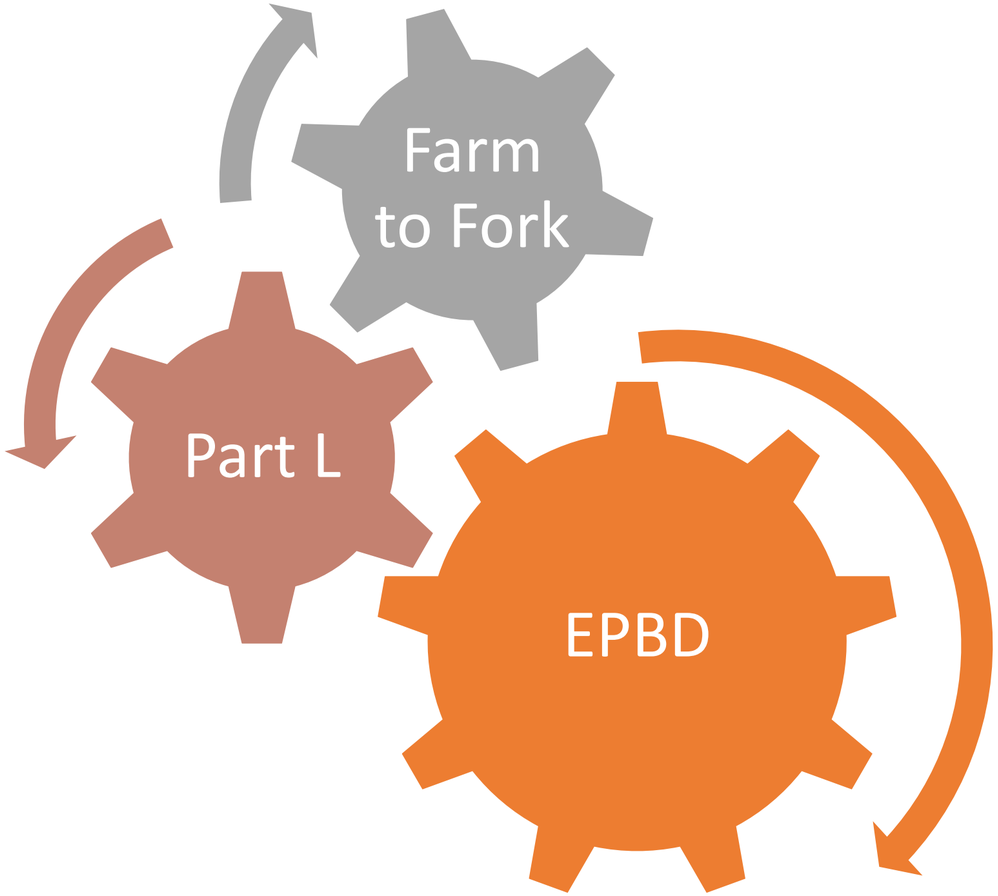
Overview

BER

MAJOR RENOVATION

NEW GREEN DEAL



Key points

1. Referring EU and national legislation
2. Materials specification for hempcrete and hemp fibre insulation
3. How different companies in EU have tackled the issues to date

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Standards

National Codes and Industry Reference Standards

Part L Domestic	Technical Guidance Document L – Conservation of Fuel and Energy in Dwellings
Part L Non Domestic	Technical Guidance Document L – Buildings Other than Dwellings
BRE 443	Conventions for U-value Calculations 2006 Edition
CIBSE Guide A	Environmental Design
EPBD	Energy Performance in Buildings Directive

Materials

CPD Construction Products Directive

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1. I want to build a hemp house

10 min

Let's say you are living in Ireland now and you have a farm with 40 acres of hemp growing, your neighbours are all growing hemp and selling the produce for seed (only real market at present in Ireland). How you do make a hempcrete house?

Here are some basic warm-up questions:

- *Where is the local decorticating machine?*
- *Can you keep the shives dry until you start the build?*
- *What length should the hemp shives be? What thickness?*

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2. I have hemp fibre and shivs, what next?

Good luck! You have no material tests on formulations. Go back to a previous slide.

- **What sort of material tests do I need?**

Broadly you will need to certify the Lambda (thermal conductivity) of the formulation, for hempcrete – that is the mix of binder and hemp shivs. For fibre, it could be a melt-binder such as bicomponent fibre. This uses a test standard EN 12667.

For hempcrete in general it is in the range of 0.07 W/mK – 0.11 W/mM depending on density, binder, moisture etc.
For fibre, it depends on density, but is equivalent to fibreglass e.g. 0.035 – 0.045 W/mK

- **Where do I get the tests done?**

•You can only use an 'accredited lab'. You must pay s~~omeone~~ ideally me - money to tell you what you already know!

- **I like spending lots of money. Please take my money!**

No problem. We love people like you.
Now also you need a fire test, strength test, moisture test, acoustic test….

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3. I’d rather buy a product

Ok so you are not the kind of can-do tycoon who will invent a whole new industry just to get a roof over your head. I understand.

1. **Tradical –** (binder and hemp formulation) – *may contain cement
2. **Isohemp –** certified block formulation
3. **Tecnicanapi – Sensini** – certified blocks and formulations
4. **Gatichanvre:** block system (infill in concrete)
5. **BIOND or Dun Agro –** certified modular system
6. **VICAT/Batichanvre:** binder

There are numerous tested formulations through Interchanvre e.g. CAVAC etc.

The problem is that at the moment the building industry is geared towards producers with deep pockets. Not to the resourceful self builder or small company.

Nonetheless that’s how the vast majority of hemp building projects are currently carried out!

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4. Solution

50 min

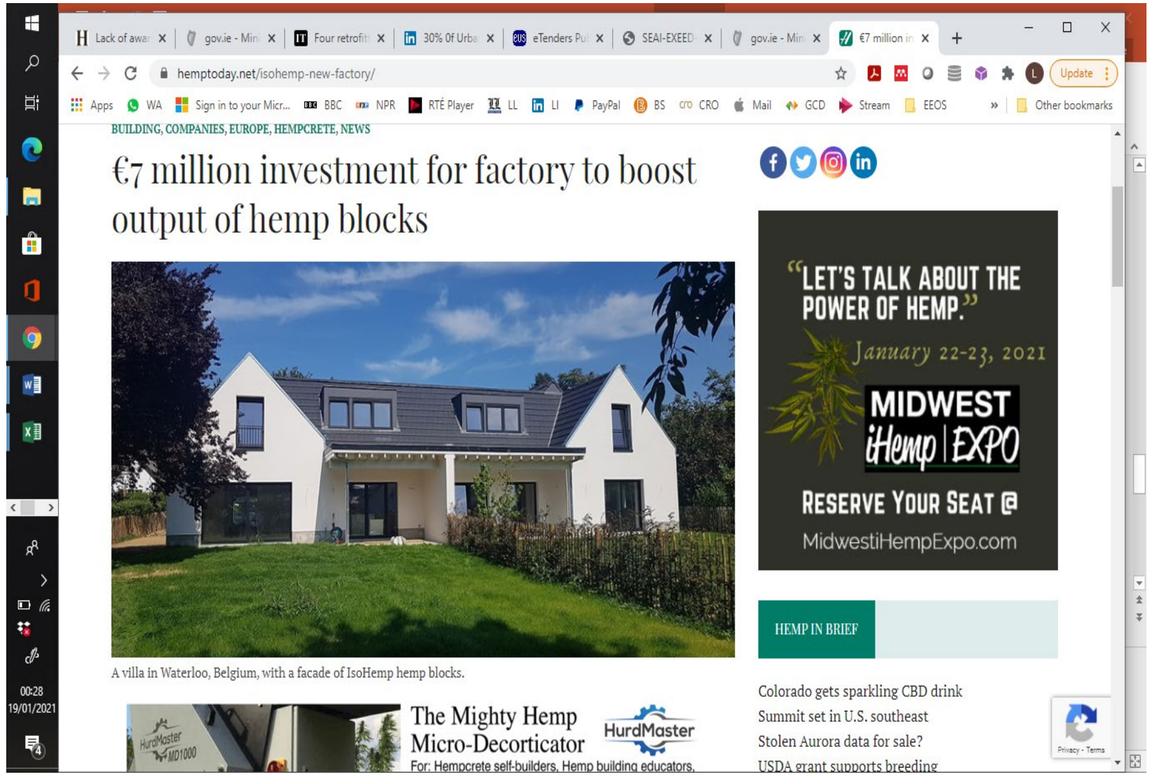
The main thing the industry wants us to do is continue ‘business as usual’

But that won’t solve climate change.

We need to find a way to standardise the materials

We need to collect and share information in a network of trusted suppliers so that architects will specify hempcrete with confidence, and homeowners will demand it be more widely used.

We can then find a way to have hempcrete as generic as concrete.



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5. Summary (1)

5 min

We need to share information across counties, countries, borders, peoples and across the pond(s).

This is what success will look like.

Material	Density (Kg/m^3)	Thermal Conductivity (W/mK)
Walls (external and internal)		
Brick (exposed)	1,750	0.77
Brick (protected)	1,700	0.56
Dense concrete block (exposed)	2,300	1.87
Light concrete block	600	0.20
Mortar (exposed)	1,900	0.94
Mortar (protected)	1,900	0.88
Surface finishes		
Plaster (dense)	1,300	0.57
Plaster (light-weight)	600	0.18
*** Why are there no figures for LHC in this CIBSE table? ***		
Insulation		
Expanded polystyrene slab (EPS)	15	0.04

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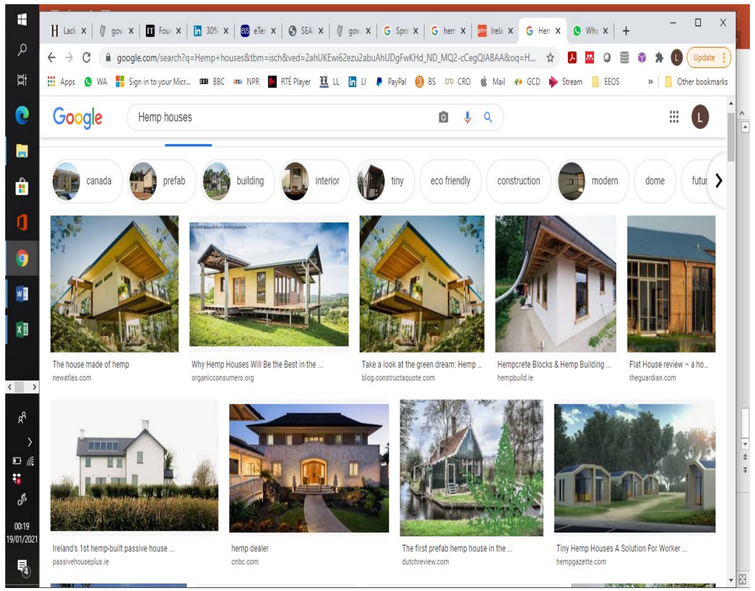
5. Summary (2)

5 min

We need to share information across counties, countries, borders, peoples and across the pond(s).

This is what success will look like.



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