



# Cavipor<sup>®</sup>

## CLAY FOAM INSULATION

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Frank Reuter, BASF SE  
December 2025



**CAVIPOR**  
CLAY FOAM INSULATION

**■ BASF**

We create chemistry

# About today's speaker



**Dr. Frank Reuter**



**Office, lab & production in Ludwigshafen**



**TEAMWORK!**

**2001 – 2008:** Chemistry studies in Mainz and Dijon

**2008 – 2010:** Doctorate in Inorganic Chemistry in Mainz

**2011 – 2014:** Laboratory Manager in Research at BASF SE

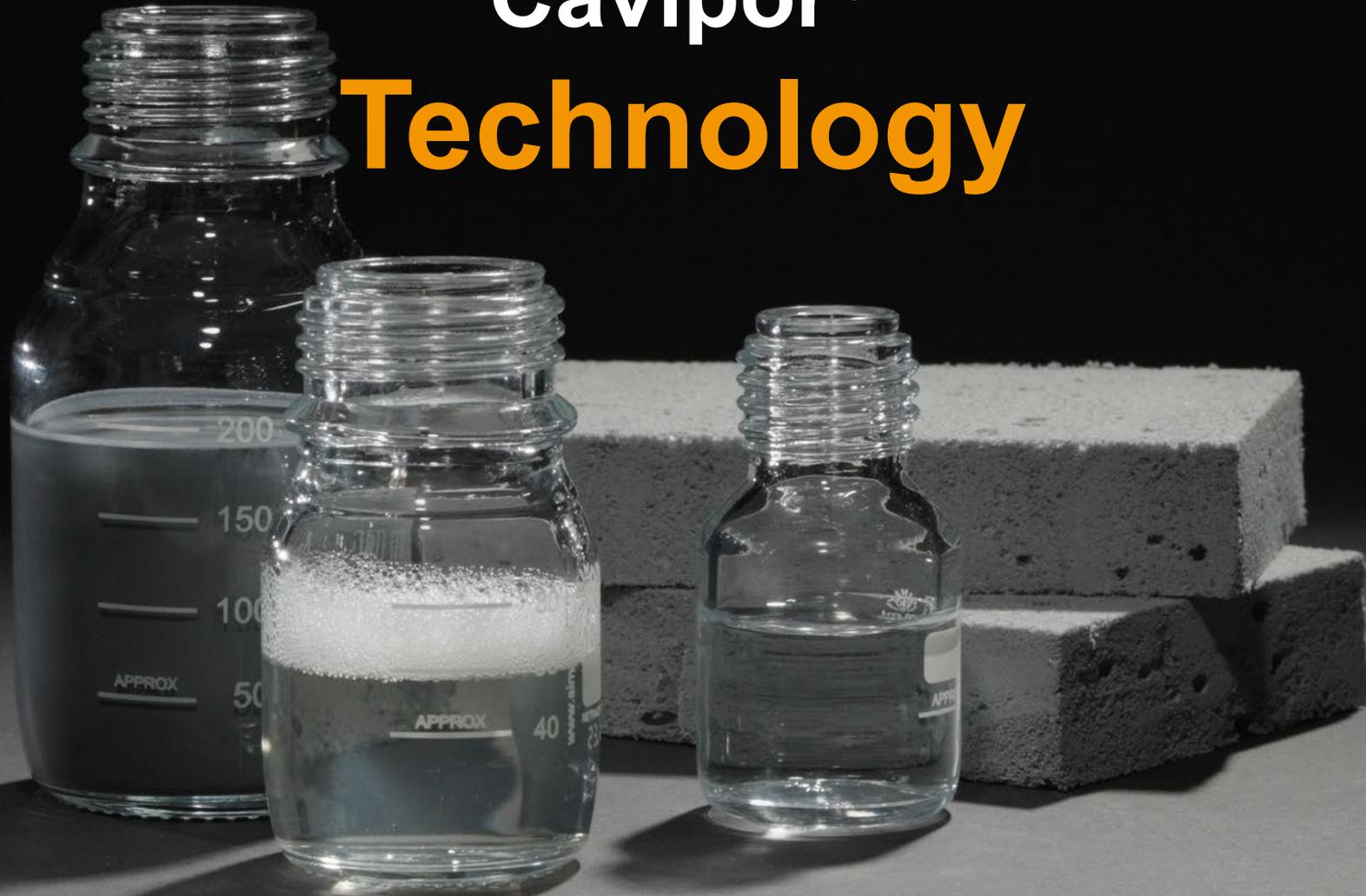
**2015 – today:** Project and Business Manager Caviopor® at BASF SE

## You will see that Cavipor is...

- ... an in-situ insulation system made from three harmless components and air.
- ... mineral-based ('clay foam'), non-combustible and fully recyclable.
- ... approved and sold in Europe & UK for Cavity Wall Insulation.
- ... approved for a lot of further applications.

**...the reliable insulation system for a sustainable future!**

# Cavipor<sup>®</sup> Technology



# Cavipor is the world's first 3-component system for the production of in-situ clay foam insulation



Template  
*surfactant*  
*additive*



Filler  
*binder*  
*minerals*

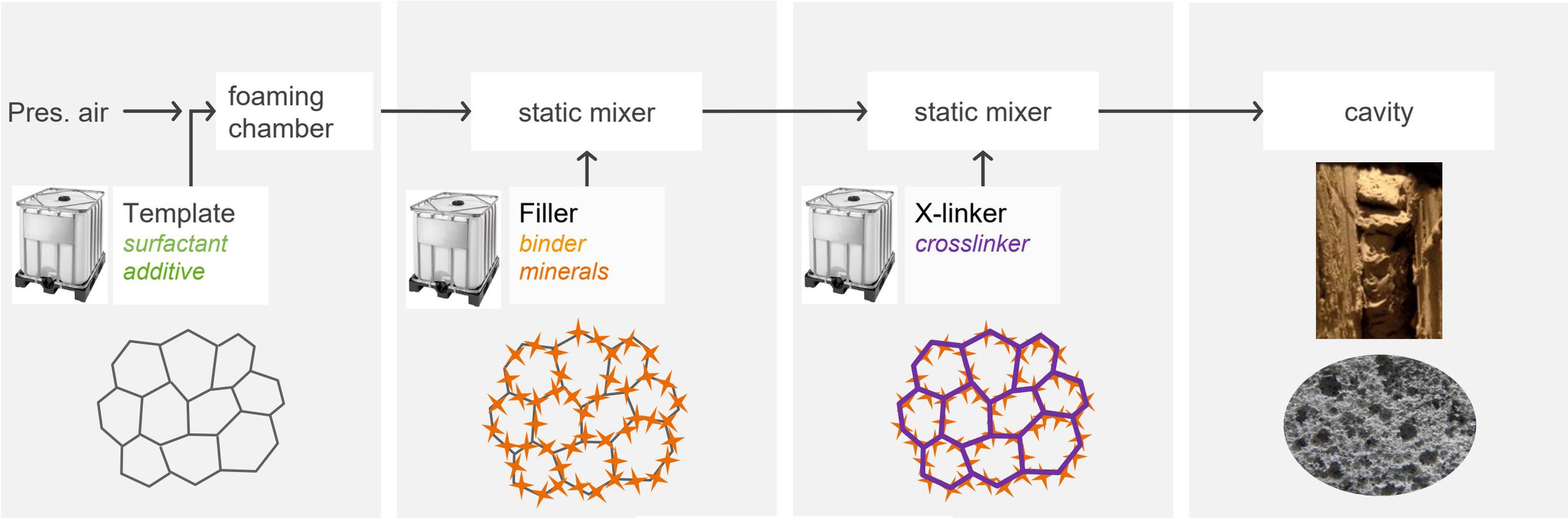


X-linker  
*crosslinker*

BASF produces the three **Cavipor-components** and provides **technical support**.  
Recipe, process and application of mineral based foam is **patented by BASF**.

# The foam is created in three steps

Frothing                      Addition of filler                      Addition of crosslinker                      Setting and drying



Mass ratio: Template 1 : Filler 4 : Crosslinker 0.6

# Clay foam formation - Lab-trial



# Clay foam formation – automated machine

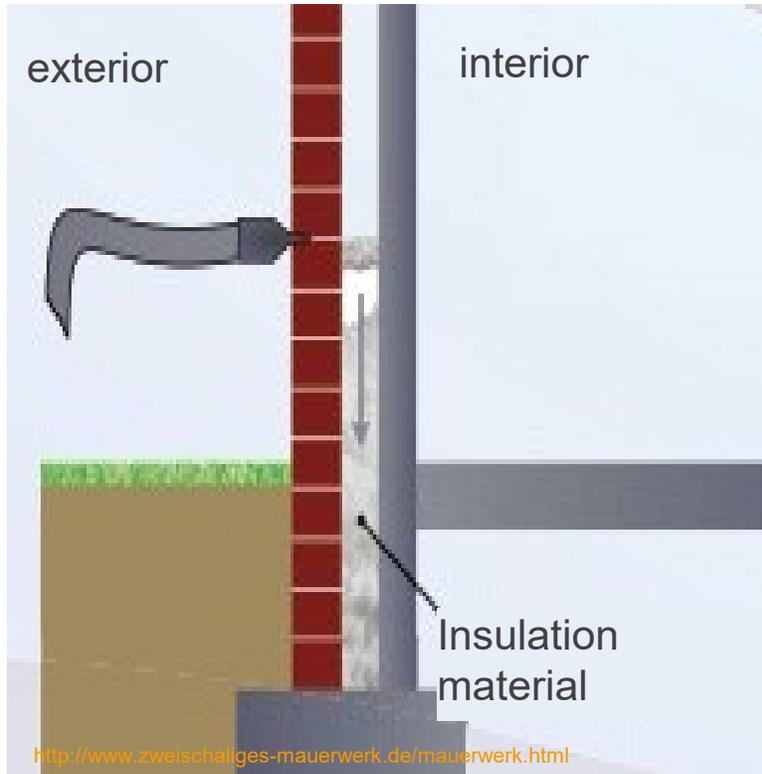


# Cavipor<sup>®</sup> Application



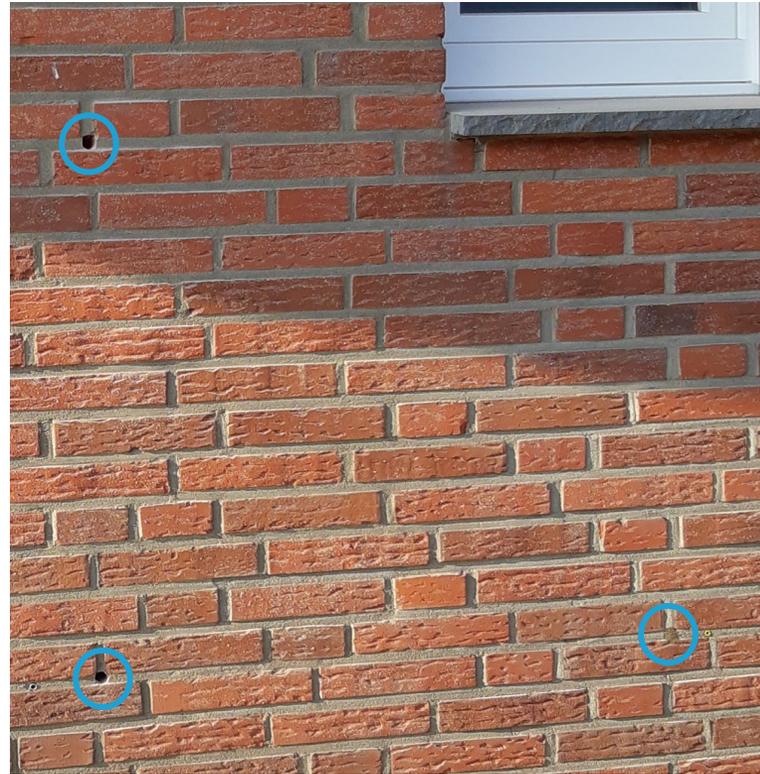
# Application – Cavity Wall Insulation (CWI)

Concept of CWI



Insulation in refurbishment or new-built

Cavipor application



Installation through small drilling holes

Cavipor filled model wall (1500\*1500\*100mm)



Seamless insulation layer

# Application – Cavity Wall Insulation on site

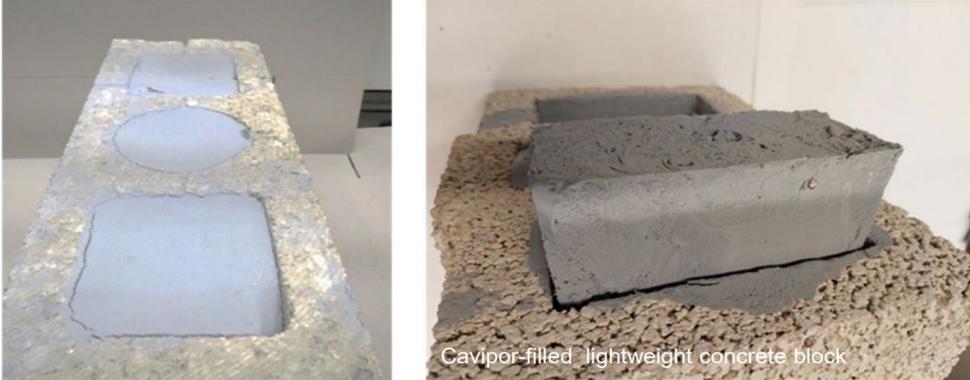


# Application – further certified opportunities

## Exterior and interior dry walls



## Hollow building blocks



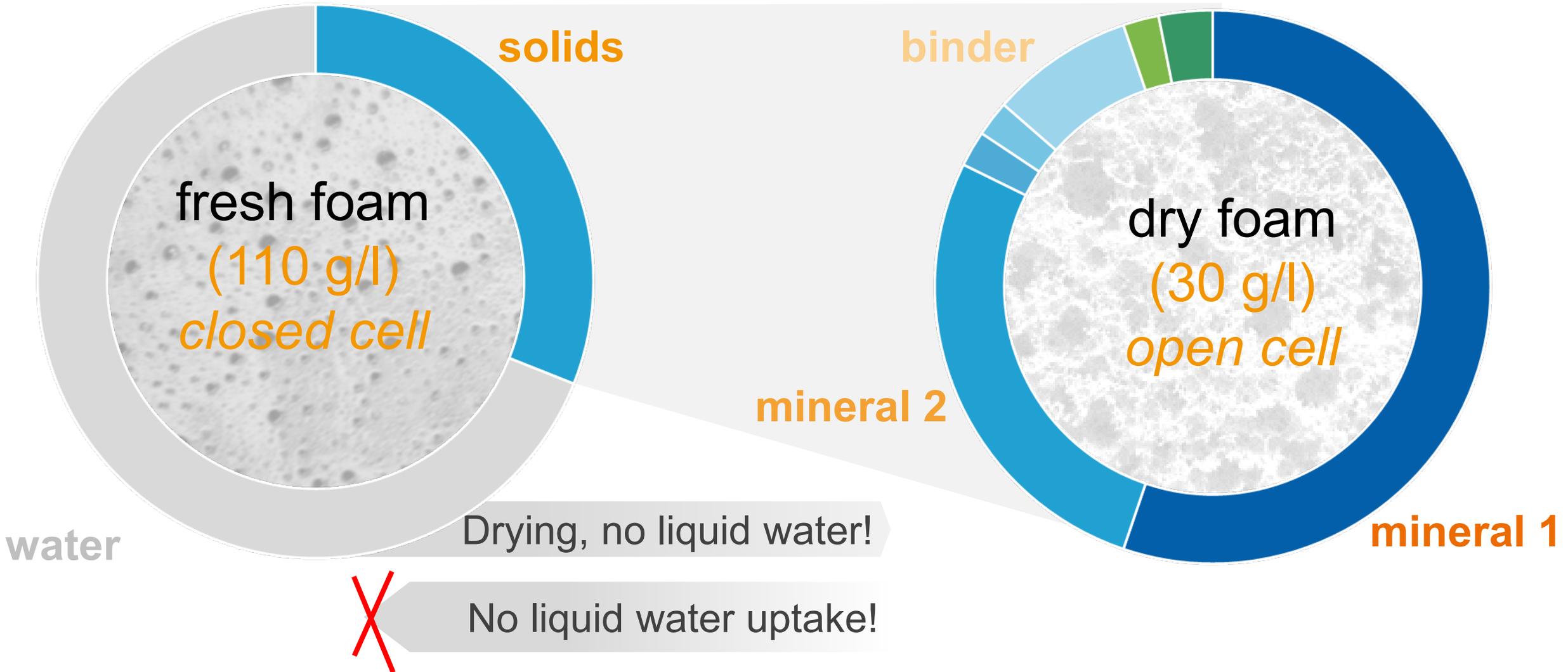
## Roof and floor slab



A close-up photograph of a dark, granular surface, possibly sand or a fine powder. Several water droplets of varying sizes are scattered across the surface. The droplets are in sharp focus, showing their rounded shapes and the way they reflect light. The background is blurred, emphasizing the texture of the surface and the clarity of the water.

# Cavipor<sup>®</sup> Properties

# Mass Composition



# Material properties

## property

Thermal insulation

Safety

Non-combustibility

## result

$\lambda_{23^{\circ}\text{C}/50\%\text{rH}} = 32.8 \text{ mW/K}\cdot\text{m}$

~ UF, EPS & MiWo

Best EMICODE emission class EC1<sup>PLUS</sup> “very low VOC emissions”

No fibers

Harmless components

Caloric value < 3 MJ/kg

SBI test passed

WLG 035



A2 – s1,d0

# Fire behavior

B2 small burner test



(mini) SBI Test



# Material properties

## property

Thermal insulation

Safety

Non-combustibility

Sustainability

further

## result

$\lambda_{23^{\circ}\text{C}/50\%\text{rH}} = 32.8 \text{ mW/K}\cdot\text{m}$

~ UF, EPS & MiWo

Best EMICODE emission class EC1<sup>PLUS</sup> “very low VOC emissions”

No fibers

Harmless components

Caloric value < 3 MJ/kg

SBI test passed

EPD-Kiwa-EE-000463-EN

CO<sub>2</sub>-footprint: ~0.5 kg CO<sub>2</sub>/kg << UF, EPS & PU

Recyclable

Sound absorbing, water repelling, vapor diffusive

WLG 035



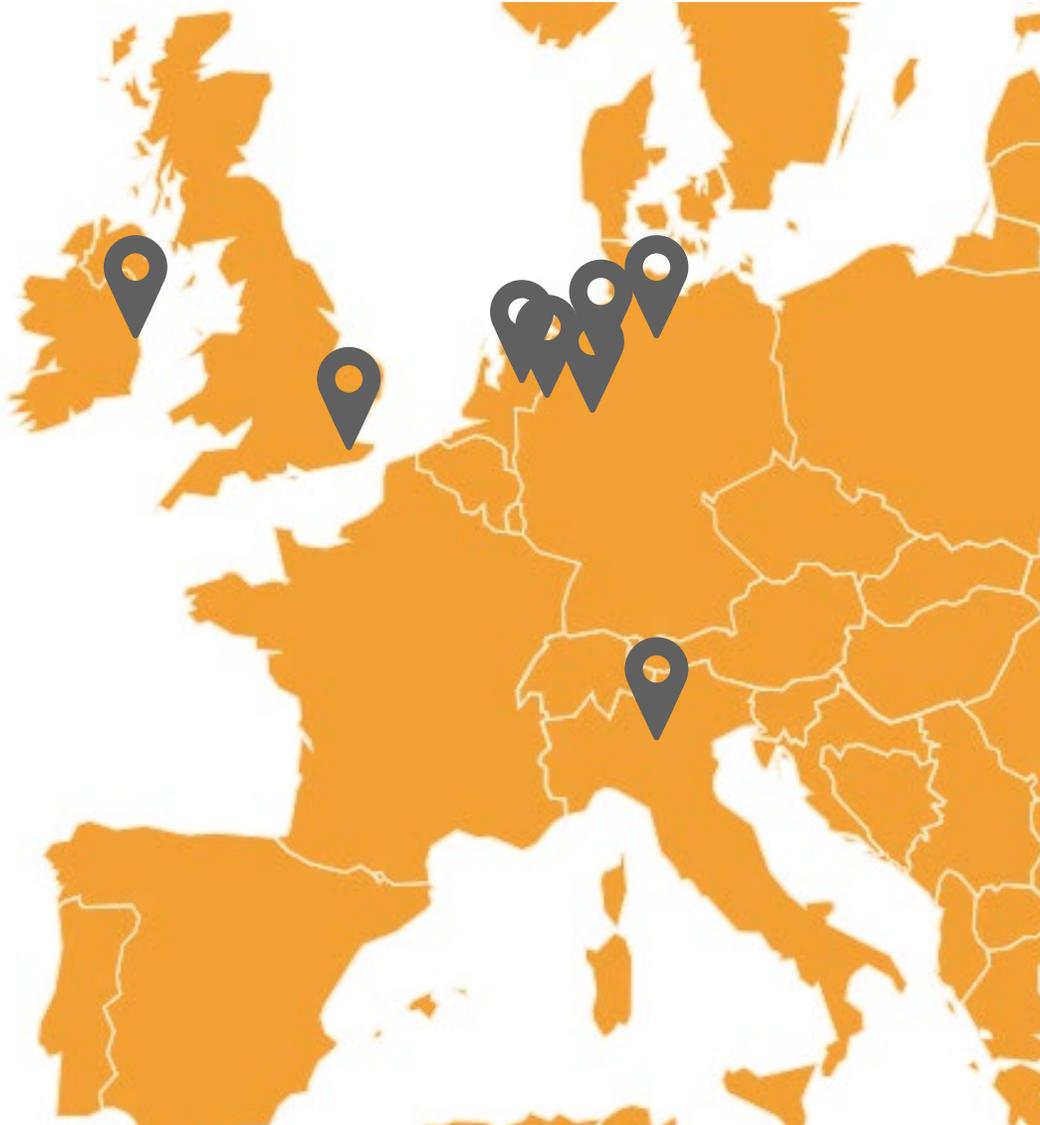
A2 – s1,d0

More informational video clips: see [www.cavipor.com](http://www.cavipor.com)



The Clay Foam  
**Network**

# The Clay Foam Network



## Clay foam suppliers

### **ECON Building products**

Dublin, Ireland

[econ-pu.com/firetite](http://econ-pu.com/firetite)

### **ECON Building products**

Kent, UK

[econbp.com/firetite](http://econbp.com/firetite)

### **Insu-Tec Deutschland GmbH**

Vierhöfen, Germany

[insu-tec.de](http://insu-tec.de)

### **Iso-Team Bocholt**

Bocholt, Germany

[iso-team.eu](http://iso-team.eu)

### **DELThERM GmbH**

Delmenhorst, Germany

[thermoschaum.de](http://thermoschaum.de)

### **Thermo Solutions BV**

Enschede, Netherlands

[thermo.solutions](http://thermo.solutions)

### **Resnova**

Brescia, Italy

[piublue.it](http://piublue.it)

## Machine providers

### **Mahr Unipre GmbH**

Werl, Germany

[mahr.com](http://mahr.com)

### **Insu-Tec Deutschland GmbH**

Vierhöfen, Germany

[insu-tec.de](http://insu-tec.de)

### **Iso-Team Bocholt**

Bocholt, Germany

[iso-team.eu](http://iso-team.eu)

More information:  
see [clay-foam.com](http://clay-foam.com)



Cavipor®  
**Summary**

## As you have seen Caviopor is...

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- ... mineral-based ('clay foam'), non-combustible and fully recyclable.
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**...the reliable insulation system for a sustainable future!**



Cavipor<sup>®</sup>  
Q&A



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Thank  
You



[cavipor.com](http://cavipor.com)  
[clay-foam.com](http://clay-foam.com)

More questions? Contact the team  
per mail: [cavipor@basf.com](mailto:cavipor@basf.com)



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