

# CETIEB Presentation WP 5

## Passive system SCHWENK



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# **THE PLASTERING SYSTEM** **COMPOSED BY:**

- 1. Mineral adhesive layer with a thickness of 3 mm**
- 2. Thermal insulation of 30 mm layer**
- 3. Thermal insulation as energy storage layer 20 mm**
- 4. Photocatalytic overcoat with a thickness of 2 mm**

# 1. Mineral adhesive

## Technical Data

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- Maximal grain size 1mm
- Density as hardened adhesive mortar - 1500 g/dm<sup>3</sup>
- **This adhesive mortar is compatible with sulphate and limestone or cement substrate !!**

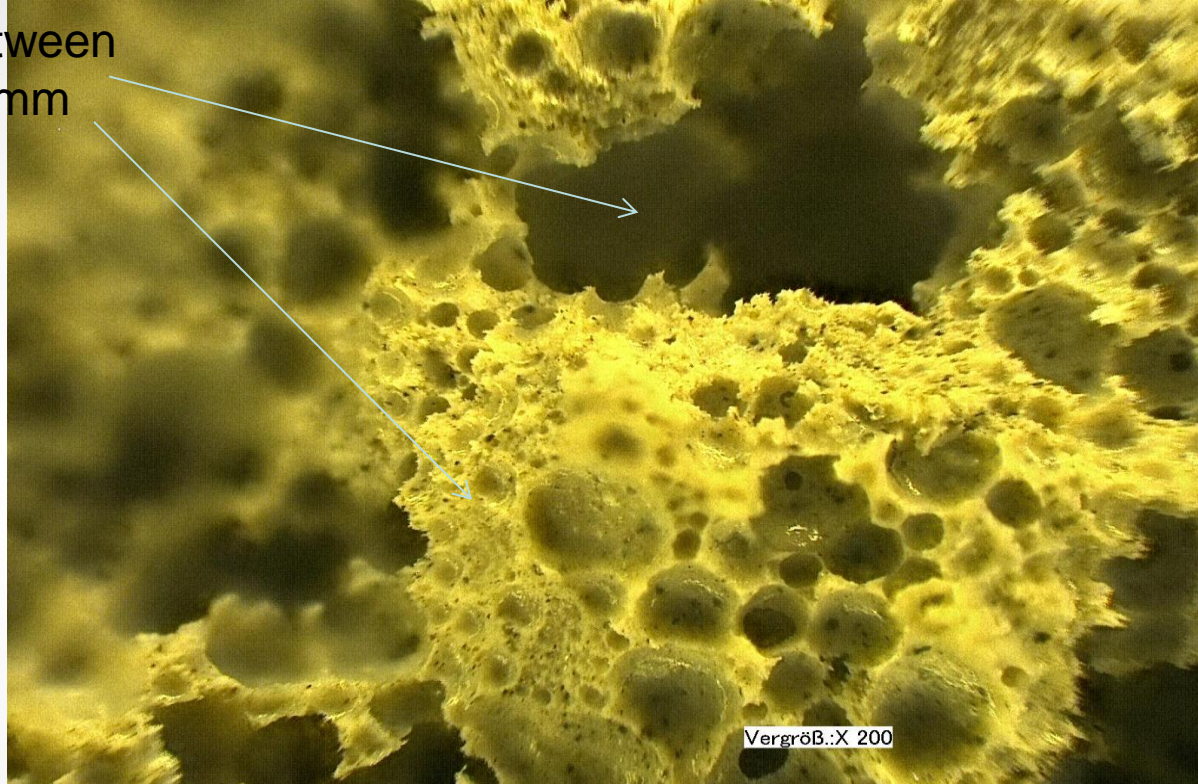
## 2. Thermal insulation mortar

### Technical Data

- ➔ **Is a specially formulated mortar with a mixture of light weight components and by using of one special sulphate and cement resistant binder**
- ➔ **The density of the dry hardened mortar = 360 g/dm<sup>3</sup>**
- ➔ Compressive strength after 7 days in the lab = 0,71 N/mm<sup>2</sup>
- ➔ Compressive strength after 28 days in the lab = 1,04 N/mm<sup>2</sup>
- ➔ The shrinkage after 28 D is by 1,2 mm/m

# Thermal insulation mortar view by stereo microscope

Porosity between  
0,01 and 2 mm

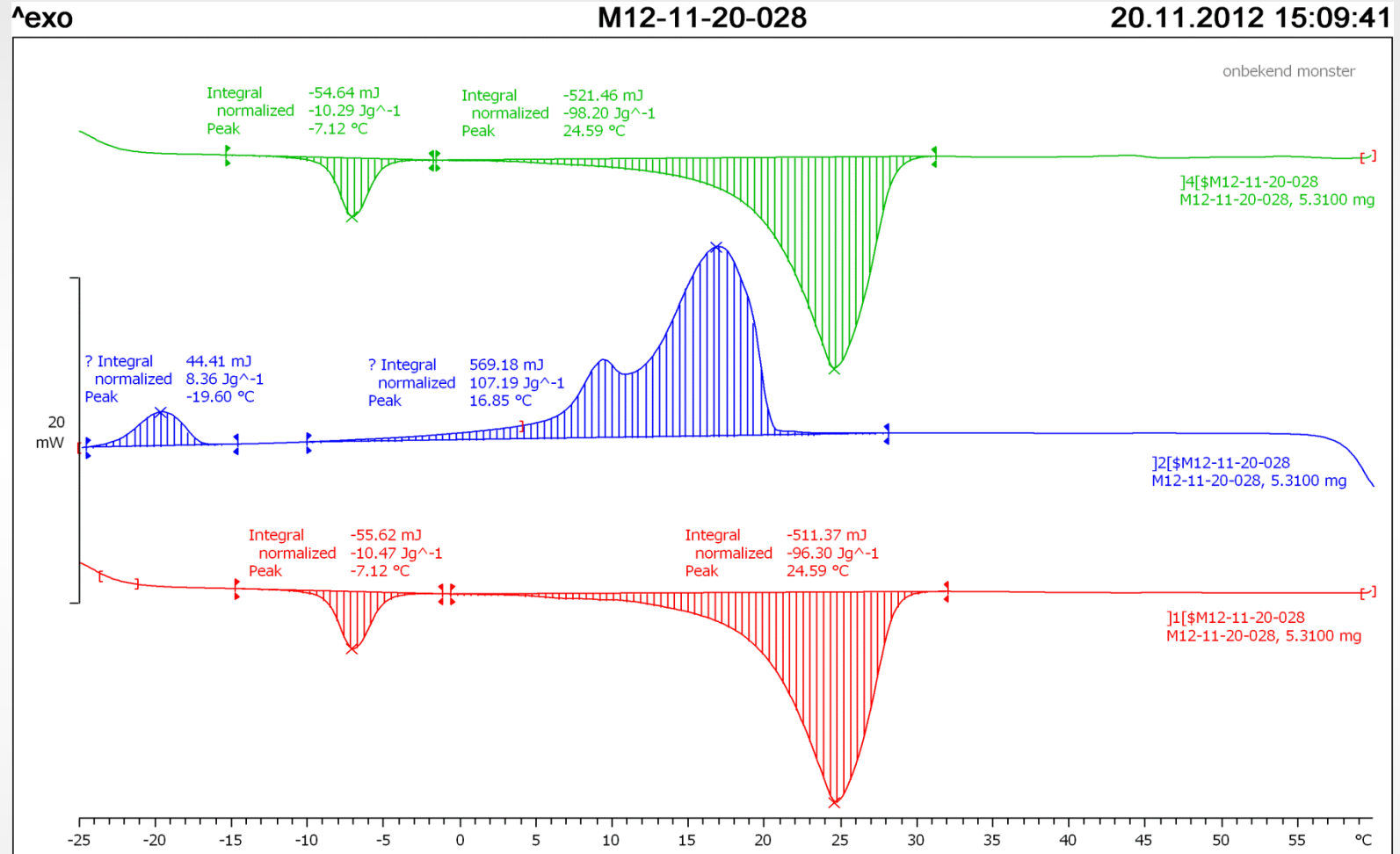


### 3. Thermal insulation as energy storage mortar

#### Technical Data

- **Is a specially formulated mortar by using of one special sulphate and cement resistant binder with PCM to store the thermal energy**
- The density of the dry hardened mortar in the lab =  $435 \text{ g/dm}^3$
- Compressive strength after 7 days in the lab =  $1,90 \text{ N/mm}^2$
- Compressive strength after 28 days in the lab =  $1,83 \text{ N/mm}^2$
- The shrinkage after 28 D is by  $1,4 \text{ mm/m}$

# Thermal storage by PCM



Synbra Technology B.V.: lab

STAR<sup>®</sup> SW 9.20

# 4. Photocatalytic overcoat

## Technical Data

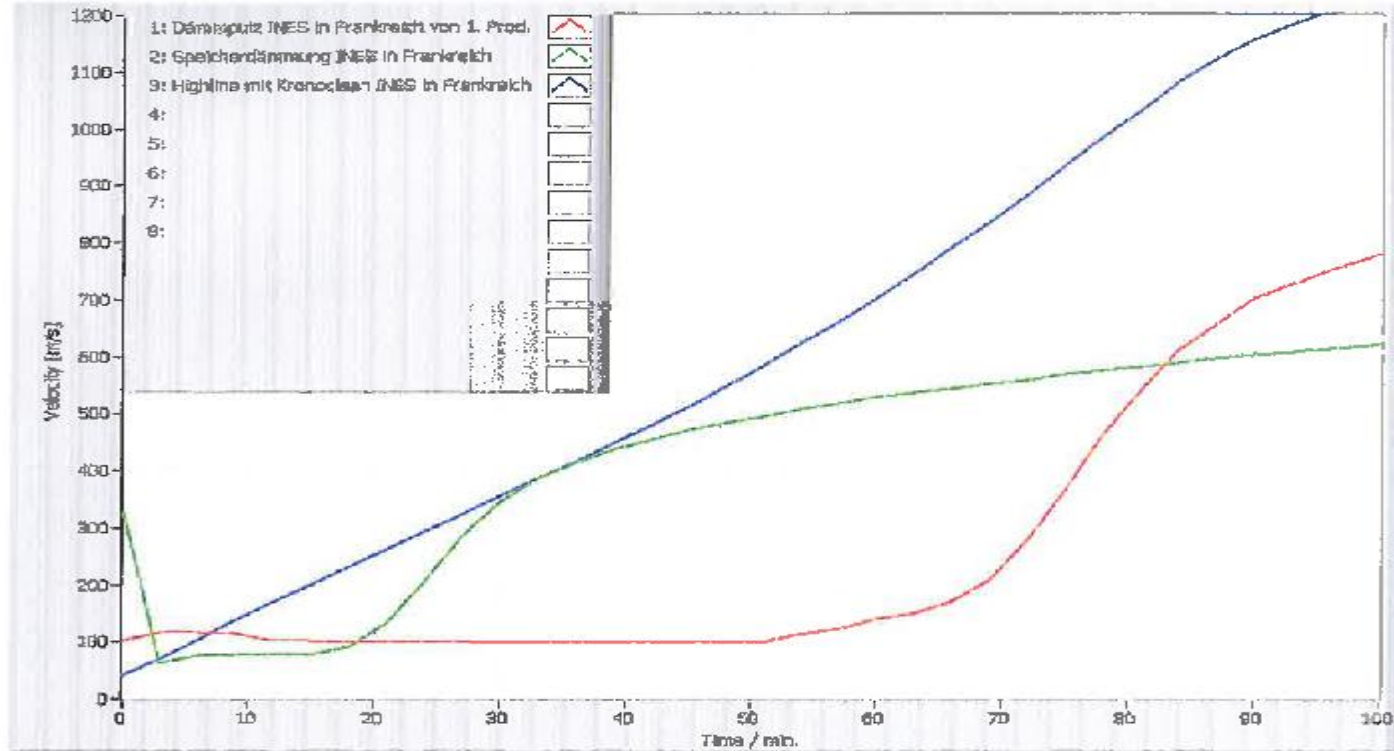
- ➔ **Is a specially formulated overcoat by usage of one special sulphate and cement resistant white binder with nano TiO<sub>2</sub> as photocatalytic component**
- ➔ Maximal grain size = 0,25 mm
- ➔ Compressive strength after 7 days in the lab = 5,52 N/mm<sup>2</sup>
- ➔ Compressive strength after 28 days in the lab = 8,40 N/mm<sup>2</sup>
- ➔ **The shrinkage after 28 D is by 0,30 mm/m**



# Setting processes



Setting process



Ultra Test GmbH

13.03.2013