

1. OBJECT

Report on the behaviour of the surface treatment on Tabihaus® panels and in particular in the joint area.

2. PURPOSE

It is made by the exposure to temperature of a coating with an acrylic mortar placed on two Tabihaus® panels connected by a joint and fixed on studs simulating the behaviour of a partition wall with its encounters, joints, floor, ceiling and corners.

3. COMPOSITION

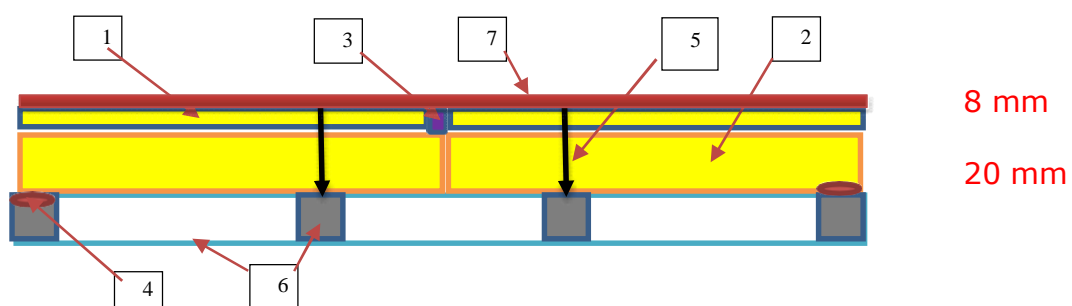


8+20 Tabihaus® panel. (1) -

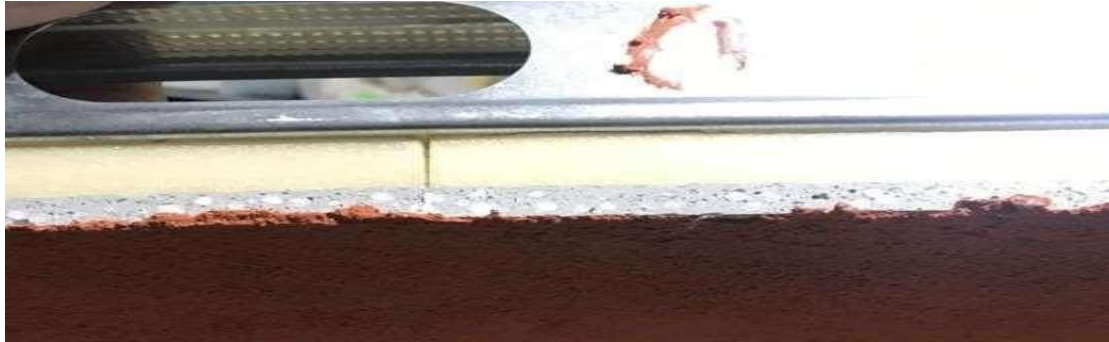
- 1) 8 mm magnesium sulphate board
- 2) 20 mm thick high-density polystyrene

Accessories

- 3) Fixing Polymer (Board joint)
- 4) Fixing Polymer (Board joint)
- 5) Fastening screws
- 6) Structural studs and channels
- 7) 2 mm thick acrylic coating



a) The joints between panels are in contact by the joint of both panels (no separation).

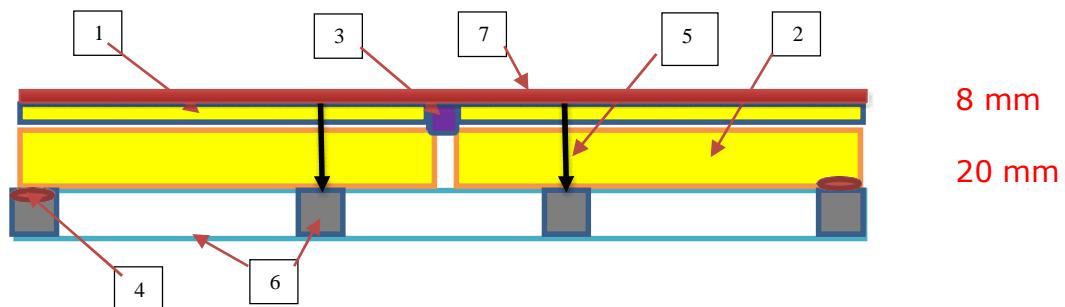


8+20 Tabihaus® panel. (2) –

- 1) 8 mm magnesium sulphate board
- 2) 20 mm thick high-density polystyrene

Accessories

- 3) Fixing polymer (Board joint)
- 4) Fixing polymer (Board joint)
- 5) Fastening screws
- 6) Aluminium perimeter
- 7) Structural studs and channels
- 8) 2 mm thick acrylic coating



b) The joints between panels are 2 mm separated by the joint of both panels.





4. METHODOLOGY

- The method used is the exposure of the panels coated with the acrylic mortar to temperatures ranging from 30°C to 80°C.
- 1) 8+20 panel (1) and (2)
 - Panels (1) and (2) are placed with the furnace at 30°C.
 - The temperature is raised progressively until it reaches extreme temperatures such as in this case 80°C.
 - Once this temperature is reached, the temperature is lowered for progressive cooling. This is done by removing the heat source.
 - The panels are then removed from the drying oven, observing for cracks in the entire surface of the coating and especially in the central joint.
- ❖ Elements used
 - Process and control
 - Forced air drying oven to stabilise the material for two hours.
 - Dimensions 500 x 600 x 500
 - Temperature calibrated up to 200°C
 - Temperature recorder
 - PCE T 390 with four points



- Assembly materials
 - 8+20 Tabihaus® panel (1)
 - 8+20 Tabihaus® panel (2)
 - 48mm channel, self-supporting structure used in plasterboard systems
 - 46mm stud, self-supporting structure used in plasterboard systems
 - Joint filler (Board joint)
 - Fixing polymer (Board joint)
 - 35mm PM screws
 - Acrylic mortar

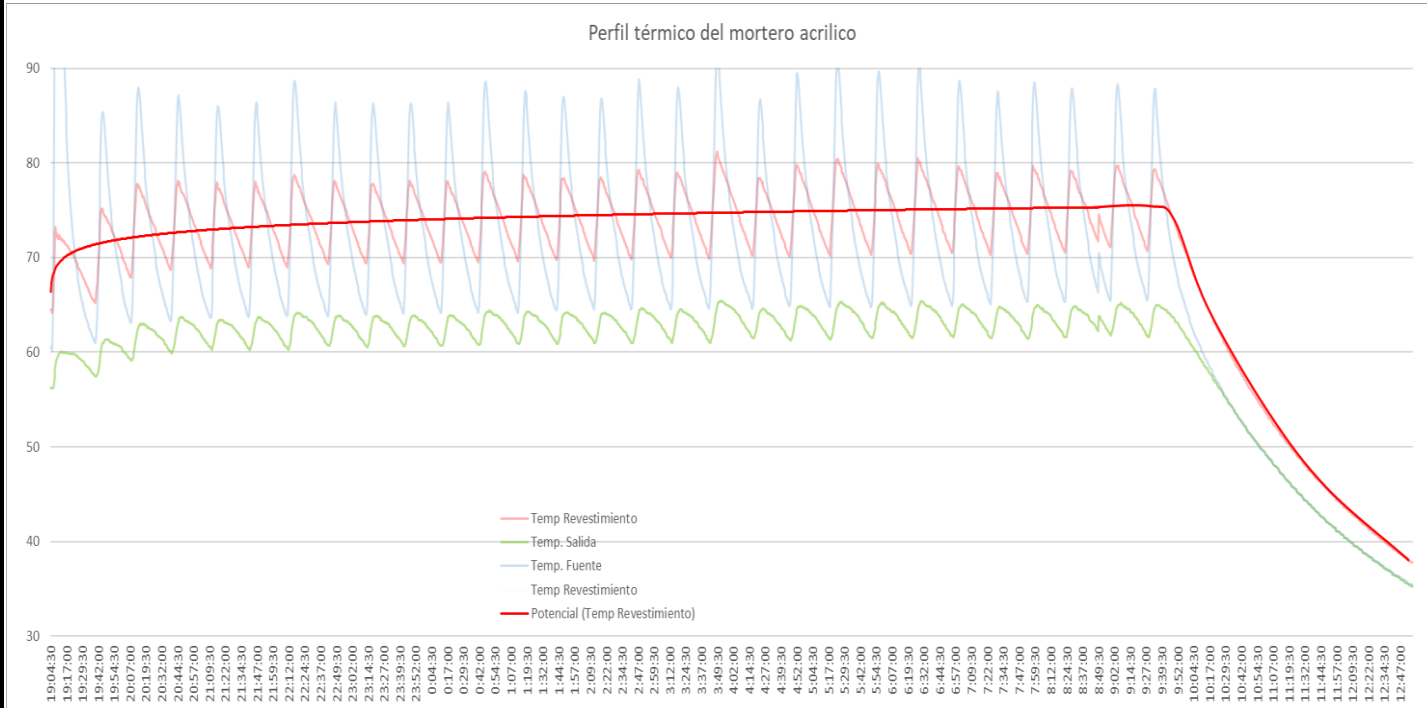
5. RESULTS

- **Thicknesses obtained in the application:**



Thickness values range from 1.2 to 2 millimetres thick

• **Thermal profile obtained:**



In the graph we consider the potential straight line (red line) to remove the sawtooth that gives us the start and stop of heat energy from the source. Until it joins with the drop produced by the stop of the heat source. This is a free fall.

As shown in the figure, the source of heat input is the blue line, and the green line is the ambient temperature in the chamber or outlet.

• **Incidental results of joint treatment**

PANEL TYPE	SURFACE TREATMENT
○ 8+20 Tabihaus® panel (1)	Crack-free
○ 8+20 Tabihaus® panel (2)	Crack-free



6. CONCLUSIONS

The test is subjected to heat conditions with gentle uphill ramps and a downhill ramp due to a power outage. This makes it steeper, but it is still approximately 10°C/hour. The uphill ramp is not reflected from the beginning, being approximately 15°C/hour. With these maximum values of 80°C of temperature, it is considered that the partition is taken to extreme conditions. Even so, with this thermal jump of 50°C no cracks are observed.

In summary, with the tests carried out with the materials indicated, the methodology and accompanied by the documentation provided such as their technical data sheets, it can be considered that:

The tests carried out according to the assembly procedure and materials indicated, together with the extreme conditions to which they were subjected, **show no evidence of cracks in the joints or in their perimeter**, which indicates the suitability of the materials used.

Gelsa 19 November 2021

JM Aznar.
Director-Técnico

Note: The documentation provided is annexed to the report.

