

1. OBJECT

Study of the behaviour of 2- and 6-mm expansion joints treated on Tabihaus® panels.

2. PURPOSE

It is made by temperature exposure of a sealing joint in two Tabihaus® panels on studs and a perimeter frame simulating the behaviour of a partition wall with its expansion joints, façade start, roofs and corners.

3. COMPOSITION

8+20 Tabihaus® panel. (1) –

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

Accessories

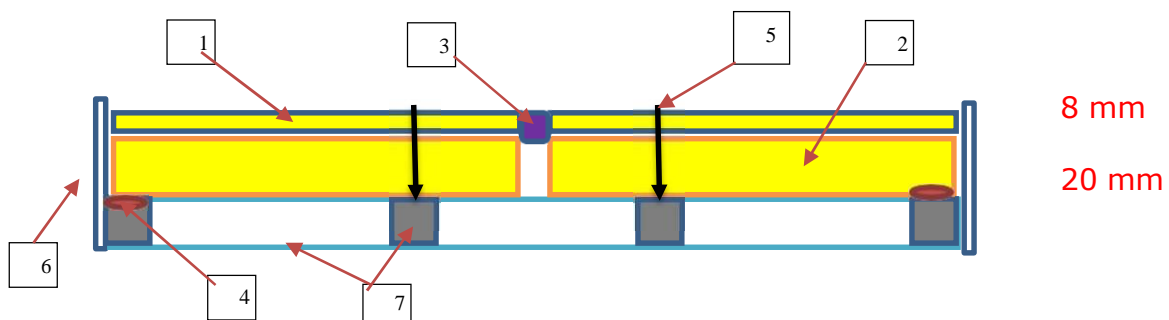
- 3) Tabihaus® polymer
- 4) Tabihaus® polymer
- 5) Fastening screws
- 6) Aluminium perimeter
- 7) Structural studs and channels

8+20 Tabihaus® panel. (2) –

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

Accessories

- 3) Tabihaus® polymer
- 4) Tabihaus® polymer
- 5) Fastening screws
- 6) Aluminium perimeter
- 7) Structural studs and channels



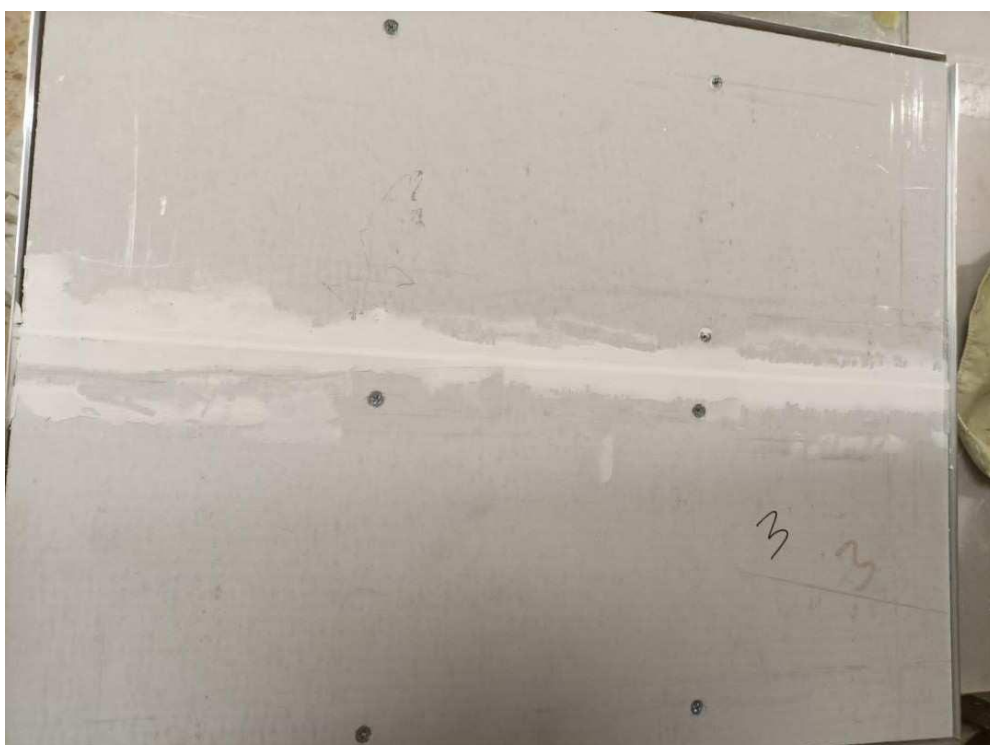
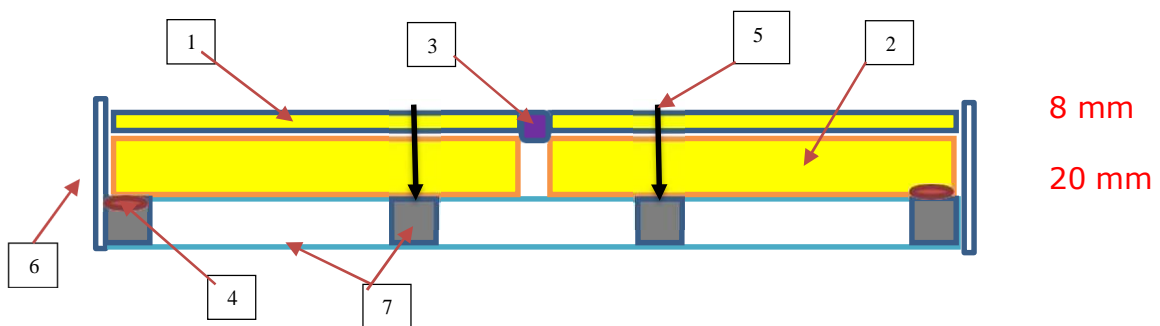


8+20 Tabihaus® panel. (3) –

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

Accessories

- 3) Tabihaus® polymer
- 4) Tabihaus® polymer
- 5) Fastening screws
- 6) Aluminium perimeter
- 7) Structural studs and channels





Back of Tabihaus® Panel specimen

Longitudinal joint
Stud and channel structure

Aluminium perimeter

4. METHODOLOGY

- The method used is the exposure of the panels to temperatures from 30°C to 94°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 94°C.
 - Once this temperature is reached, it is lowered for progressive cooling.
 - Subsequently, the existence or not of cracks in the joints is observed.

 <p style="text-align: center;">GELSA</p>	<p>FAPYLSA R&D+I LABORATORY</p> <p><i>Behaviour of joint treatment in Tabihaus® sandwich panels</i></p>	 <p>Code: EN AND 0221 Page 4 of 6 DATE: November 2021</p>
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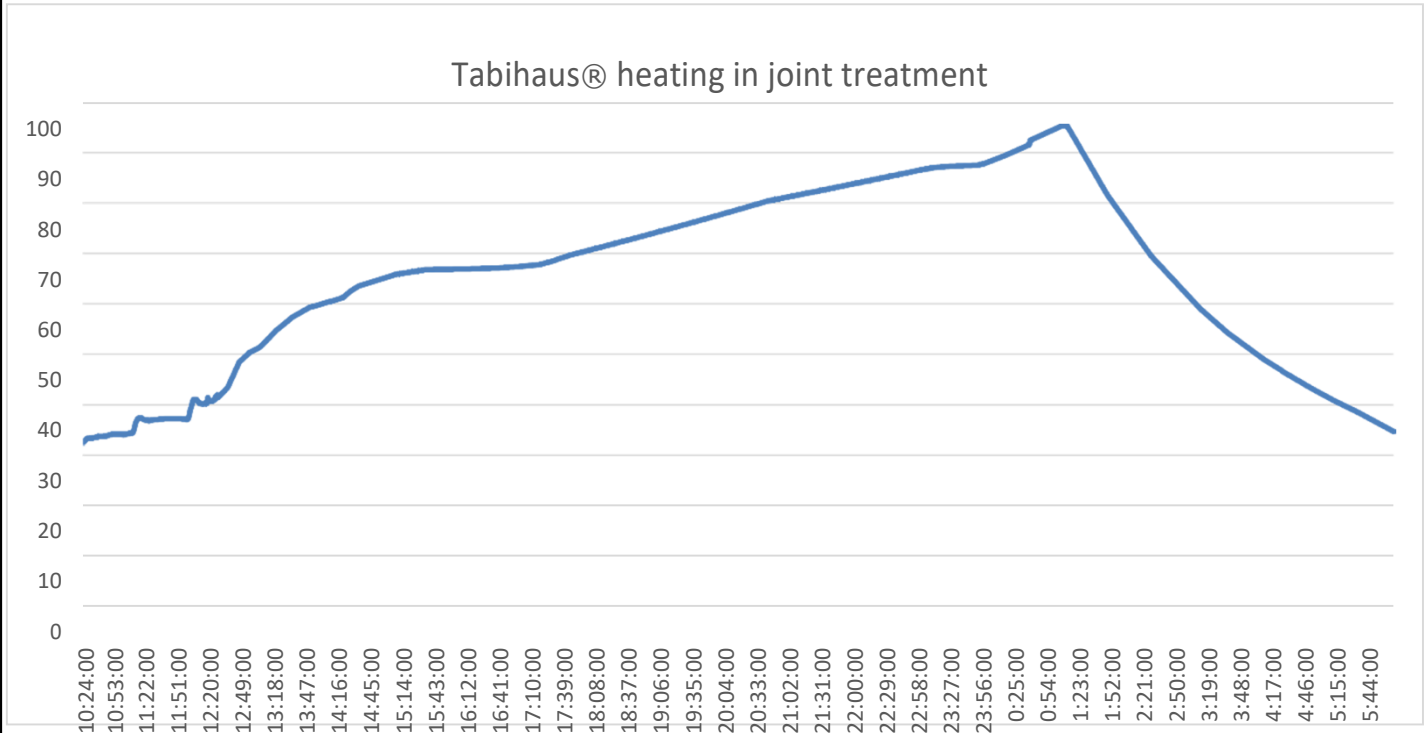
❖ Elements used

- Process and control
 - o Forced air drying oven to stabilise the material for two hours.
 - Dimensions 500 x 600 x 500
 - Temperature calibrated up to 200°C
 - o Temperature recorder
 - PCE T 390 with four points
- Assembly materials
 - o 8+20 Tabihaus® panel (1)
 - o 8+20 Tabihaus® panel (2)
 - o 8+20 Tabihaus® panel (3)
 - o 1.5 mm aluminium frame
 - o 48mm channel. Self-supporting structure used in plasterboard systems.
 - o 46mm stud. Self-supporting structure used in plasterboard systems.
 - o Tabihaus® bonding compound
 - o Tabihaus® polymer
 - o 35mm PM screws



5. RESULTS

- **Thermal profile obtained:**



- **Dimensional results**

	Warm		Cold		Expansion L	Expansion L
	width	length	width	length		
Board 1	481,01	590,19	479,98	589,66	1,03	0,53
	480,29	589,81	480,09	589,62	0,2	0,19
	480,31	589,88	479,97	589,19	0,34	0,69
Board 2	478,64	589,28	478,6	589,05	0,04	0,23
	479,23	589,49	478,53	589	0,7	0,49
	479,15	589,47	478,78	589,01	0,37	0,46
Board 3	479,85	588,35	479,77	587,89	0,08	0,46
	480	588,7	479,74	587,83	0,26	0,87
	480,15	588,64	479,95	587,72	0,2	0,92



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• **Incidental results of joint treatment**

TYPE OF PANEL	JOINT TREATMENT
o 8+20 Tabihaus® panel (1)	Without cracks
o 8+20 Tabihaus® panel (2)	Without cracks
o 8+20 Tabihaus® panel (3)	Without cracks

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 12°C/hour. In other words, the very gentle ascent ramp is compensated by the descent ramp to allow for extreme situations such as the 65°C thermal jump without cracking.

Longitudinal variations are not considered as values because of the aluminium frame dimensions and only variations are considered as obvious and normal.

In summary, it can be considered that the tests carried out with the materials indicated in the methodology and accompanied by the documentation provided, such as their technical data sheets, 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**, which indicates the suitability of the materials used.

Gelsa a 12 de Noviembre 2021

JM Aznar. Director-
Técnico

