

ACT Europe  
Active Composite Technologies  
Attn. Mr. H.P.J. van Zutphen  
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THE NETHERLANDS

Our reference      2021-Efectis-R000883/KSB/TNL      Bleiswijk (NL), June 21, 2021  
Your reference      Test performed May 27, 2021  
Project number      ENL-21-000479

## Reaction to fire testing of AcrylicOne panels 10 mm

Dear Mr. Van Zutphen,

On May 27, 2021, we have performed, on behalf of your firm, an indicative Single Burning Item (SBI) test according to EN 13823:2020 to determine the reaction to fire behaviour of **AcrylicOne panels, thickness 10 mm.**

### 1. PURPOSE OF TESTING

The purpose of the test was to find out which classification could be achieved for the product according to the European classification standard EN 13501-1:2018.

Immediately after testing you were informed about the test results.  
This letter is meant as a final reporting of this part of the examination program on the products described.

### 2. SAMPLES

On May 10, 2021, a representative sample of the product type was submitted by your firm.

According to the sponsor the product is composed of:

- One layer of acrylic component A1, with a mass per surface area of 3 kg/m<sup>2</sup>
- Second glass fibre layer laminated with acrylic component A1, with a total mass per surface area of 15 kg/m<sup>2</sup> and composed of 6 triaxial layers of glass fibre with a mass per surface area of 160 g/m<sup>2</sup>/per layer.

The acrylic component A1 is composed of:

- Mixing ratio 2 parts powder, 1 part acrylic resin
- Colour creamy white. The colour of A1 can vary slightly with every production batch
- Density (wet) 1.75 kg / dm<sup>3</sup>
- Density (dry) 1.66 kg / dm<sup>3</sup>
- Hardness 85° Shore D

The product has a thickness of approx. 10 mm and a mass per unit area of approx. 18 kg/m<sup>2</sup>.

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## 2.1 SPECIMEN PREPARATION

The long wing of the specimen was not provided with joints.  
Both short and long wings were positioned with an air gap of 40 mm to a backing board.

## 3. EXAMINATION

Prior to testing the specimens were conditioned until constant mass according to EN 13238:2010. In total one Single Burning Item (SBI) test according to EN 13823 was performed.

### 3.1 TEST RESULT SBI-TESTS

Table 1: Results Single Burning Item tests

Test number		1
Test parameter		
FIGRA Threshold: 0.2 MJ	[W/s]	81
FIGRA Threshold: 0.4 MJ	[W/s]	78
THR <sub>600s</sub>	[MJ]	3.1
Lateral flame spread to the edge of the long wing specimen (LFS) {Y=Yes/N=No}		N
SMOGRA	[m <sup>2</sup> /s <sup>2</sup> ]	0.0
TSP <sub>600s</sub>	[m <sup>2</sup> ]	31
Flaming droplets/particles ≤ 10 s, within 600 sec {Y=Yes/N=No}		N
Flaming droplets/particles > 10 s, within 600 sec {Y=Yes/N=No}		N

Classification criteria of the Single Burning Item (SBI) test only to be used after a full examination			
Class	Classification criteria	Class	Classification criteria
A2	FIGRA <sub>0.2 MJ</sub> ≤ 120 W/s LFS < edge of the long wing specimen THR <sub>600s</sub> ≤ 7,5 MJ	s1	SMOGRA ≤ 30 m <sup>2</sup> /s <sup>2</sup> TSP <sub>600s</sub> ≤ 50 m <sup>2</sup>
		s2	SMOGRA ≤ 180 m <sup>2</sup> /s <sup>2</sup> TSP <sub>600s</sub> ≤ 200 m <sup>2</sup>
B	FIGRA <sub>0.2 MJ</sub> ≤ 120 W/s LFS < edge of the long wing specimen THR <sub>600s</sub> ≤ 7,5 MJ	s3	Not s1 or s2
C	FIGRA <sub>0.4 MJ</sub> ≤ 250 W/s LFS < edge of the long wing specimen THR <sub>600s</sub> ≤ 15 MJ	d0	No flaming droplets/particles
		d1	No flaming droplets/particles longer than 10 s
D	FIGRA ≤ 750 W/s	d2	Not d0 or d1

FIGRA Fire Growth Rate. The maximum quotient of the heat release of the test specimen and the moment of occurrence, using a THR-threshold 0,2 MJ or 0,4 MJ

THR Total Heat Release. Total heat release of the test specimen during the first 600s exposure to the flames of the main burner.

LFS Lateral Flame Spread. Horizontal flame spread across the long wing of the test specimen.

- SMOGR A SMOke Growth RAte. The maximum quotient of the smoke production of the test specimen and the moment of occurrence.
- TSP Total Smoke Production. Total smoke production of the test specimen during the first 600s of exposure to the flames of the main burner.

#### 4. ASSESSMENT

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Based on the table with classification criteria the possible classification of the product can be determined, when a complete test series according EN 13823 would be performed.

Only based on the classification parameters results of a complete test series a formal classification can be determined. As with an indicative examination this requirement is not fulfilled, no classification can be given.

##### 4.1 REMARK

Indicative examination is carried out by Efectis Nederland to give the contractor insight in the reaction to fire behaviour properties of the product(s).

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

Best regards,



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