

All tests in this report are executed according to the ISO 9001  
 certified Quality management system of the BBRI

 Test Centre  
 Offices  
 Head Office

 B-1342 Limelette, avenue P. Holoffe 21  
 B-1932 Sint-Stevens-Woluwe, Lozenberg 7  
 B-1000 Brussels, rue du Lombard 42

 Tel.: +32 (0)2 655 77 11  
 Tel.: +32 (0)2 716 42 11  
 Tel.: +32 (0)2 502 66 90

## TEST REPORT

<b>Laboratory</b>	ROOF AND FAÇADE ELEMENTS (CAR)	<b>O/References</b>	DE 651XN877 CAR 17016-3 Page 1/6
-------------------	--------------------------------	---------------------	--

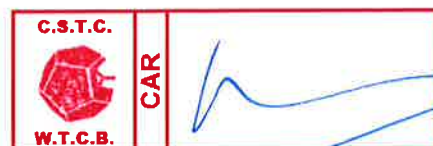
<b>Requested by</b>	<b>PCE FOAMGLAS – MR. PIET VITSE</b> Albertkade 1 B- 3980 TESSENDERLO PHONE: 0032 (0) 473/ 523 405 <a href="mailto:piet.vitse@pce.be">piet.vitse@pce.be</a>		
<b>Date of the order</b>	2017.01.20	<b>Samples registration</b>	2017-13-18/3
		<b>Date of receipt of samples</b>	2017.03.02
<b>Date of the test</b>	2017.05.02-05		
<b>Date of drafting of the report</b>	2017.06.05		
<b>Test carried out</b>	Wind uplift test on a flat roof element – mock-up 3 “TDE 25” (4 m <sup>2</sup> ): Membrane glued on T3+ with hot bitumen on continuous support (concrete)		
<b>References</b>	“Technical guide UEAtc for the agreement of waterproofing systems for flat and inclined roofs” - Version 2010		

*This test report contains 6 pages. This test report may only be reproduced in its entirety. Each page of the original report has been stamped (in red) by the laboratory and initialled by the head of laboratory. The results and findings are only valid for the tested samples.*

- No sample
- Sample(s) subjected to destructive test
- Sample(s) to be removed from our laboratories 30 calendar days after sending of the report, save in the case of a further written request



Ir. Edwige Noirfalisse  
 Responsible of the follow-up of the tests



Ir. Benoît Michaux  
 Deputy Head of Division

## 1. DESCRIPTION OF THE SAMPLE

The characteristics of the elements constituting the sample are given by the applicant and are mentioned below (\* complementary potential observations of the laboratory):

	Sample making place	Date
Sample	At BBRI	1-2/03/2017
Dimensions	Length	Width
of the sample	2100 mm	2100 mm
of the test box	2000 mm	2000 mm

### Composition of the sample

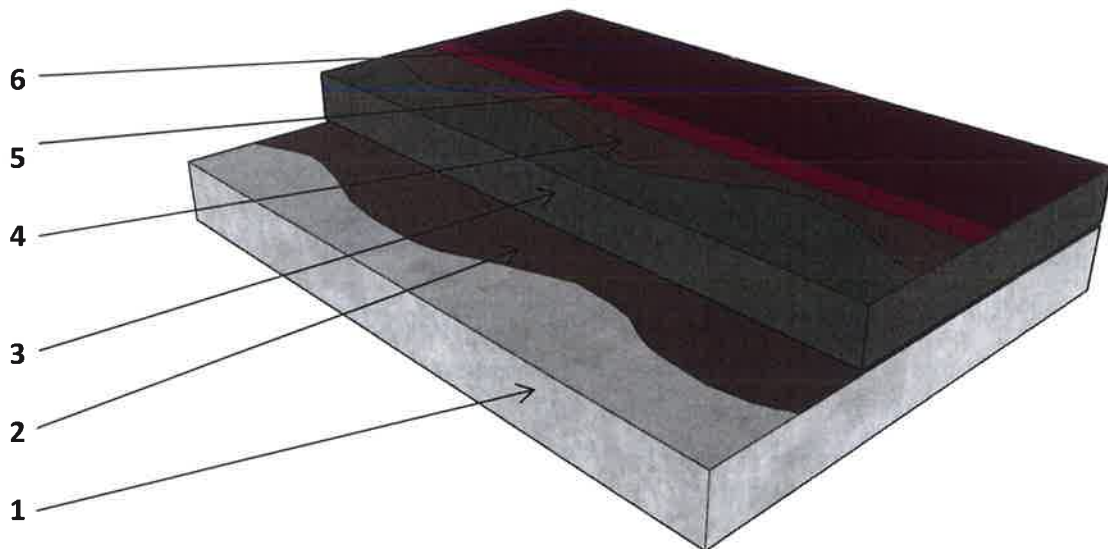


Figure 1

1	<b>Substrate</b>	Concrete type "C30/37 S3 14 EE2"; thickness 150 mm; coated with a primer "PC® EM PRIMER (SOPRADERE QUICK PRIMER)"; consumption >0,2 l/m <sup>2</sup> ; 4 holes with diameter 50 mm are drilled through the concrete substrate.
2	<b>Fastening of the insulation</b>	Glued with hot bitumen type "110/30" (Soprema) under the panels ( $\pm 5$ kg/m <sup>2</sup> ), between the panels and on top of them ( $\pm 2$ kg/m <sup>2</sup> ).
3	<b>Insulation</b>	Cellular glass panels "FOAMGLAS® T3+" ; thickness 100 mm ; dimensions of the panels 600 mm x 450 mm.
4	<b>Fastening of the waterproofing 1<sup>st</sup> layer</b>	Fully torched on the top coat of hot bitumen.
5	<b>Waterproofing 1<sup>st</sup> layer</b>	Bituminous waterproofing membrane Bituminous waterproofing membrane "SOPRAROCK® PB P3"; thickness 3 mm.
6	<b>Waterproofing 2<sup>nd</sup> layer</b>	Bituminous waterproofing membrane "SOPRALENE® OPTIMA 4 C3"; thickness 4 mm; fully torched on the 1 <sup>st</sup> layer.

The disposition of the components of the sample is given in figure 4

## 2. DESCRIPTION OF THE TEST

The wind resistance of a roof system is determined based on a pressure chamber test according to the standards listed below

Norm "Technical guide UEAtc for the agreement of waterproofing systems for flat and inclined roofs" - Version 2010

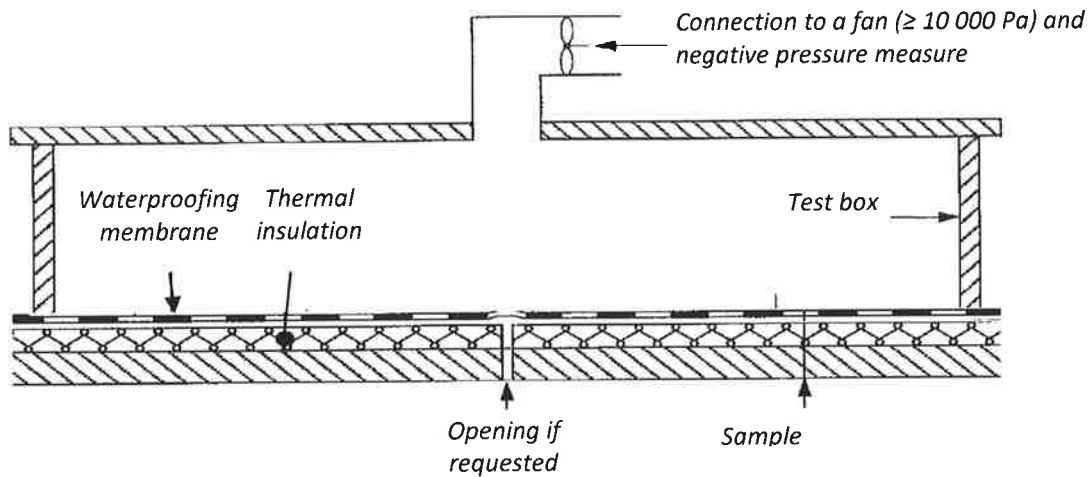


Figure 2 : Vertical cross-section of the test box

The negative pressure cycles are applied under the test box with a fan and an electronically controlled valve system allowing the creation of cycles. A storm is a sequential combination of negative pressure cycles. One applies the depressions indicated in figure 3. The test continues until the breaking of the sample per steps of 500 Pa (adhered systems) or 100 N/fastener (mechanically fastened systems) for  $Q_{100\%}$ .

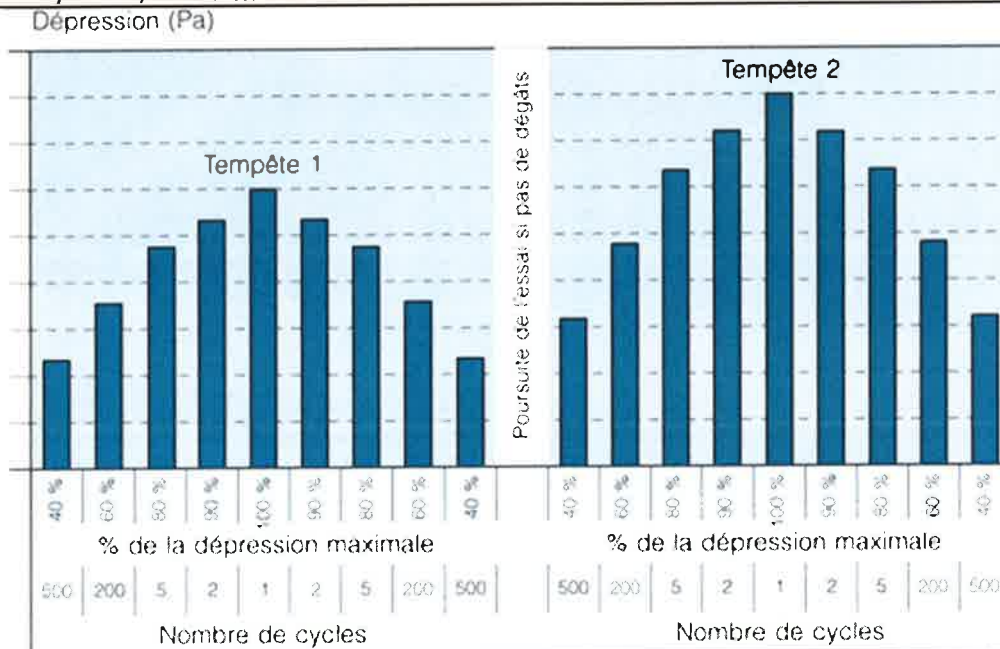


Figure 3 : Sequential combination of negative pressure cycles during a storm

### 3. RESULTS OF THE TEST

Number of storms	Maximum negative pressure $Q_{100\%}$	Remarks
4	1000 Pa	No remark
1	1500 Pa	No remark
1	2000 Pa	No remark
1	2500 Pa	No remark
1	3000 Pa	No remark
1	3500 Pa	No remark
1	4000 Pa	No remark
1	4500 Pa	No remark
1	5000 Pa	No remark
1	5500 Pa	No remark
1	6000 Pa	No remark
1	6500 Pa	No remark
1	7000 Pa	No remark
1	7500 Pa	No remark
1	8000 Pa	No remark
1	8500 Pa	No remark
1	9000 Pa	No remark
1	9500 Pa	No remark
1	10000 Pa	No remark

**The test has determined  $Q_1 = 10000$  Pa**

Break – type	No break
--------------	----------



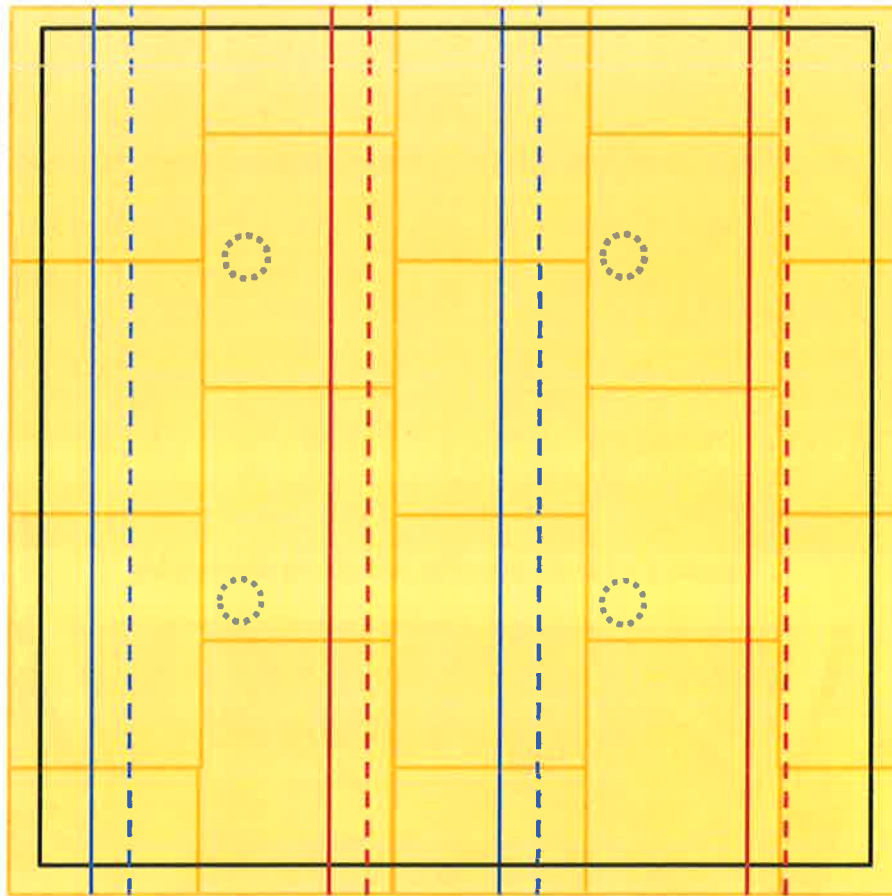
Picture 1 – Sample after the test (no break).








Picture 2 – Sample after the test during disassembly.



Picture 3 – Sample after the test during disassembly.



-  Joints between insulation panels
-  Joints of the waterproofing 1<sup>st</sup> layer
-  Joints of the waterproofing 2<sup>nd</sup> layer
-  Hole drilled in the concrete substrate
-  Test box frame

**Figure 4** - disposition of the components of the sample  
(indicative scheme made by the laboratory during disassembly)