

Test Report No. 21906B

Sponsor

FORESTIA SAS
2 rue de la carnoy
59130 Lambersart
France

Construction product and trade name

Thermo bamboo **FELIXWOOD - SYMPHONY**

Nature of the test

EN 13823:2020 – Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item.

Summary of the results

Average FIGRA _{0,2 MJ} value (W/s)	163
Average FIGRA _{0,4 MJ} value (W/s)	163
Average THR _{600s} (MJ)	11,3
Average SMOGRA value (m ² /s ²)	1
Average TSP _{600s} (m ²)	16
LFS< edge	Yes
Flaming particles or droplets f<10s	No
Flaming particles or droplets f>10s	No

PREPARED BY

APPROVED BY

This report consists of 17 pages, including 8 annexes

This document is the original version of this test report and is written in English.

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1. DESCRIPTION OF THE TEST METHOD

EN 13823:2020 – Reaction to fire tests for building products – Building products excluding floorings exposed to the thermal attack by a single burning item.

There was no deviation from the specifications contained in the test standard.

The tests are performed at WFRGENT nv, Ottergemsesteenweg – Zuid 711, B-9000 Ghent, Belgium.

2. IDENTIFICATION OF THE PRODUCT

Date of test samples arrival : 02/03/2022 (felixwood profiles)
03/03/2022 (wooden battens)

Identification of the samples : Prod. Place Known by the laboratory
Prod. Line Not known by the sponsor
Prod. Date December 2021
Identification within the quality system:
Test 4220112

Sampling done by : Forestia SAS (Mr. Melvyn Linley)

Sampling date : 21/02/2022

Name of the sponsor : FORESTIA SAS
2 rue de la carnoy
59130 Lambersart
France

Name of the manufacturer/supplier : Known by the laboratory

Trade name : **FELIXWOOD - SYMPHONY**

Description of the tested product:

This description is based on information given by the sponsor.

	Nominal values (1)	Measured values (2)
FELIXWOOD - SYMPHONY		
Type of product	Thermo bamboo profiles made from bamboo strips that are compressed and heat treated at 200 °C. The profiles are matt pre-oiled.	
Manufacturer	(4)	
Profile width (mm)	139	139
Visible width of the profile (mm)	127	127
Thickness (mm)	18	18
Density of the profile (kg/m ³)	1150	1258
Type of profile	Symphony 130 (see Figure 1)	
Applied amount of oil (g/m ²)	25	(3)
Use of fire retardants	No	
Surface structure	Smooth	
Colour	Brown	Brown

(1) Based on the information given by the sponsor

(2) Values verified by the laboratory

(3) Unverifiable by the laboratory

(4) Known by the laboratory



Symphony 130 - 1860x139x18mm

Figure 1: Cross section of the Symphony 130 profile

Mounting and fixing:

The bamboo profiles were horizontally screwed onto vertical wooden battens (thickness 28 mm, width 70 mm, density 500 kg/m³) (distance between the battens was 400 mm) using RVS symphony mounting clips as shown in Figure 2. This way an airgap of 28 mm was created between the bamboo profiles and the calcium silicate board (12mm, 870 kg/m³, standard substrate according to EN 13823:2010). They were tongue and groove joints every 139 mm due to the width of the profile.



Figure 2: RVS mounting clips

Conditioning, according to EN 13238, § 4.2 to constant mass.

Start of conditioning : 04/03/2022

End of conditioning : 17/03/2022

3. CALIBRATION RESULTS

Latest calibration date : 02/03/2022

Calibration valid until : 31/03/2022

Calibration results : Annex 8

4. RESULTS AND OBSERVATIONS

a) Conditions prior to testing

Test No.	1	2	3
Date of test	17/03/2022	17/03/2022	17/03/2022
Ambient pressure (Pa)	102300	102400	102400
Ambient relative humidity (%)	44	41	39
Ambient temperature of air (°C)	12	14	14

b) Measured values

Test No.	1	2	3	m'
FIGRA _{0,2 MJ} (W/s)	165	166	157	163
FIGRA _{0,4 MJ} (W/s)	165	166	157	163
THR _{600s} (MJ)	11,0	11,7	11,2	11,3
SMOGRA value (m ² /s ²)	1	0	1	1
TSP _{600s} (m ²)	23	13	12	16

Annex 1: Graphs $HRR_{av}(t)$, $THR(t)$, $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 1

Annex 2: Graphs $SPR_{av}(t)$, $TSP(t)$, $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 1

Annex 3: Graphs $HRR_{av}(t)$, $THR(t)$, $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 2

Annex 4: Graphs $SPR_{av}(t)$, $TSP(t)$, $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 2

Annex 5: Graphs $HRR_{av}(t)$, $THR(t)$, $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 3

Annex 6: Graphs $SPR_{av}(t)$, $TSP(t)$, $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 3

c) Observations

Test No.	1	2	3	m'
Lateral flame spread reaching far edge on long wing	No	No	No	No
Flaming particles or droplets f<10s	No	No	No	No
f>10s	No	No	No	No
Occurrence of surface flashes	No	No	No	
Smoke flowing out of the trolley into surrounding testing room	No	No	No	
Falling of parts of the specimen	No	No	No	
Development of a gap in the corner (failure of mutual fixing of backing boards)	No	No	No	
Early termination of test	No	No	No	
Occurrence of distortion or collapse of the specimen	No	No	No	

Photographs of the test specimens – Annex 7

d) Summary of test results

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.

The test results are only valid for the specimen of the product which has been tested.

The following test results were obtained in accordance with the standard EN 13823:2020:

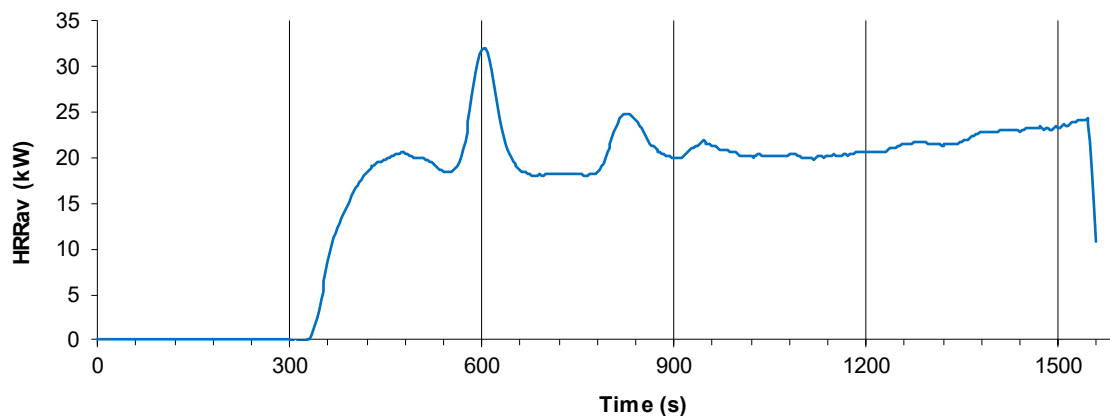
Average FIGRA _{0,2 MJ} value (W/s)	163
Average FIGRA _{0,4 MJ} value (W/s)	163
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e) Uncertainty of measurement

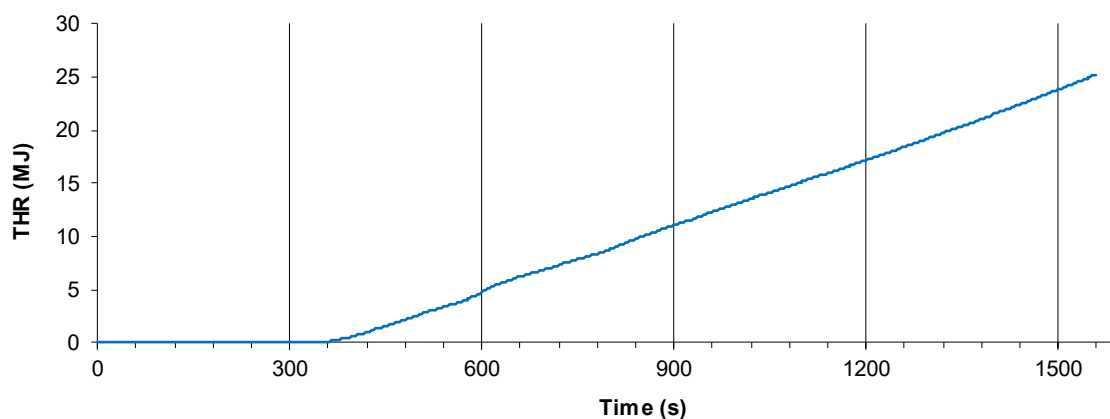
The uncertainty of test results for this test report is described in Annex B of the test standard. As this annex only covers generic products and as we know at this moment that the uncertainty can be influenced by the nature of the product in the test, the values in Annex B can only give an indication of the actual uncertainty of the tests described in this report.

Graphs $HRR_{av}(t)$, $THR(t)$ and $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 1

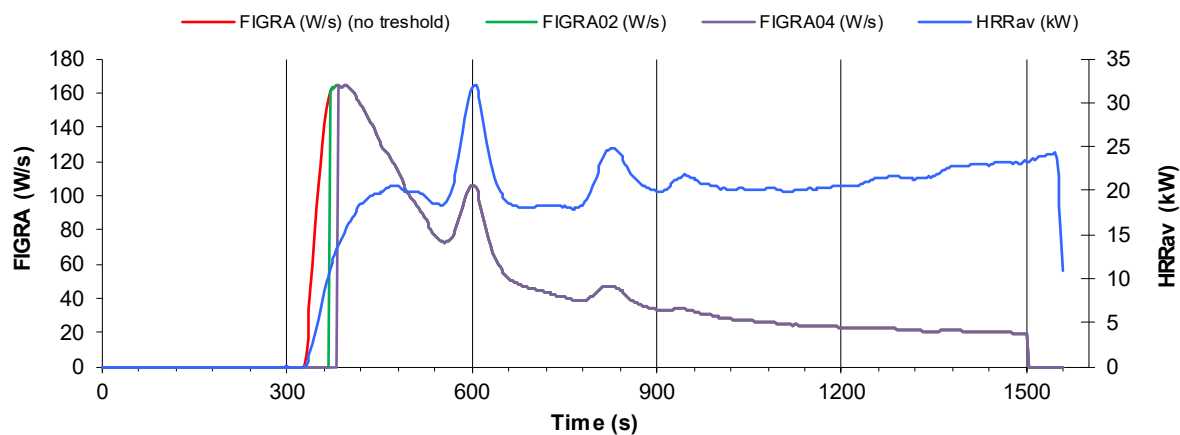
$HRR_{av}(t)$



$THR(t)$

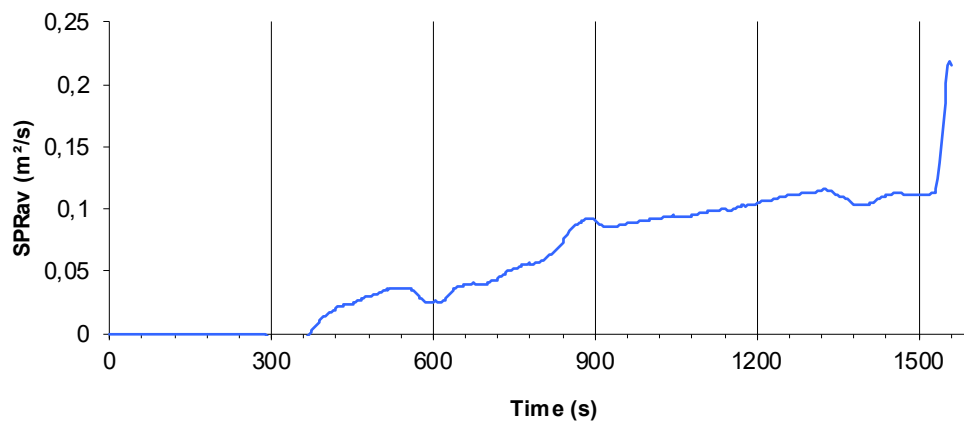


$1000 \times HRR_{av}(t) / (t-300)$

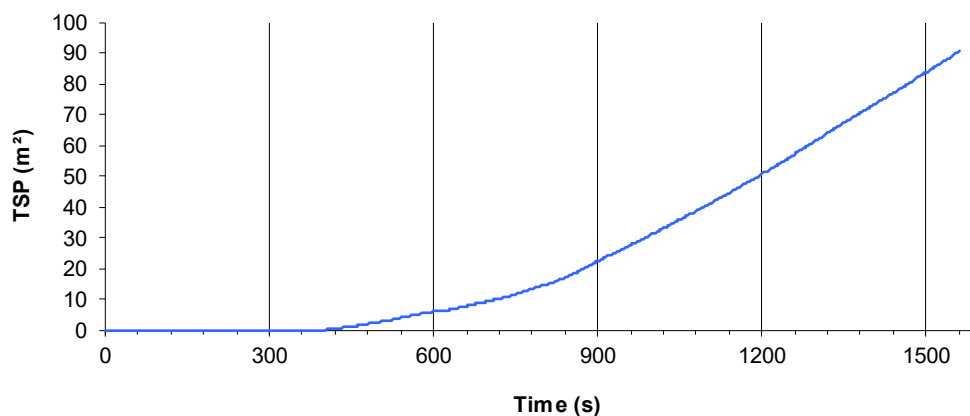


Graphs $SPR_{av}(t)$, TSP (t) and $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 1

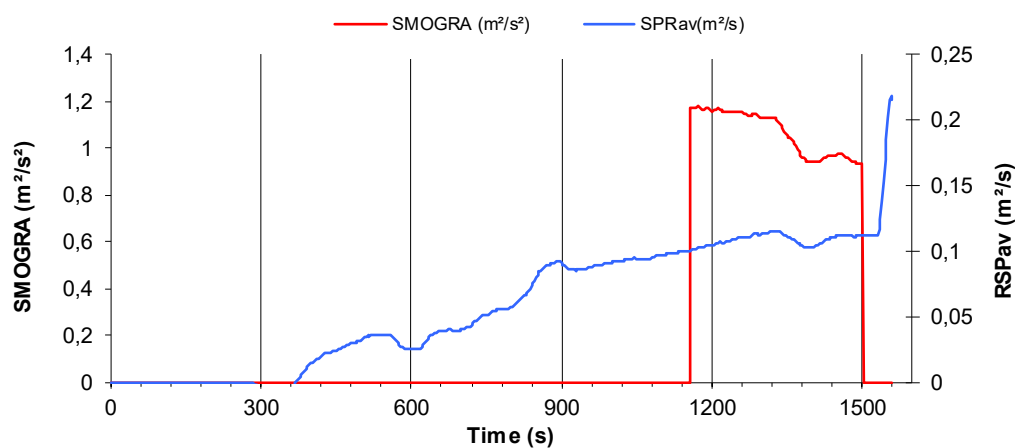
$SPR_{av}(t)$



TSP (t)

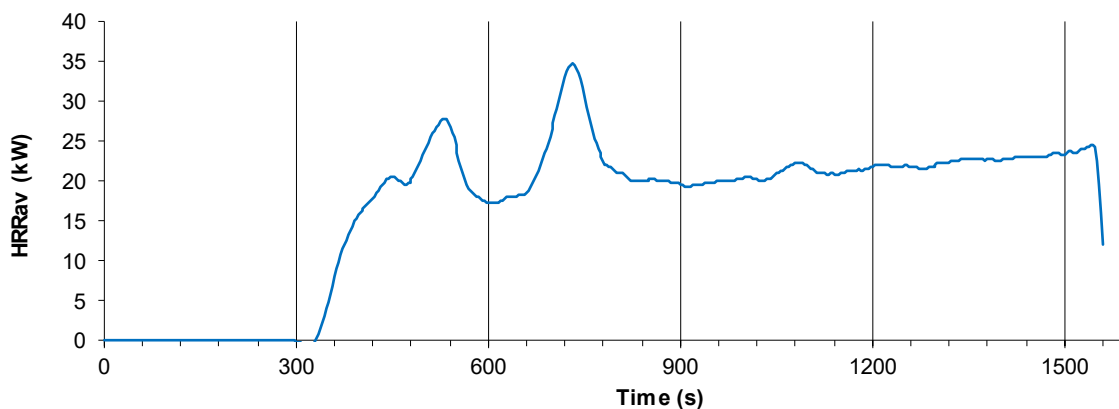


$10000 \times SPR_{av}(t) / (t-300)$

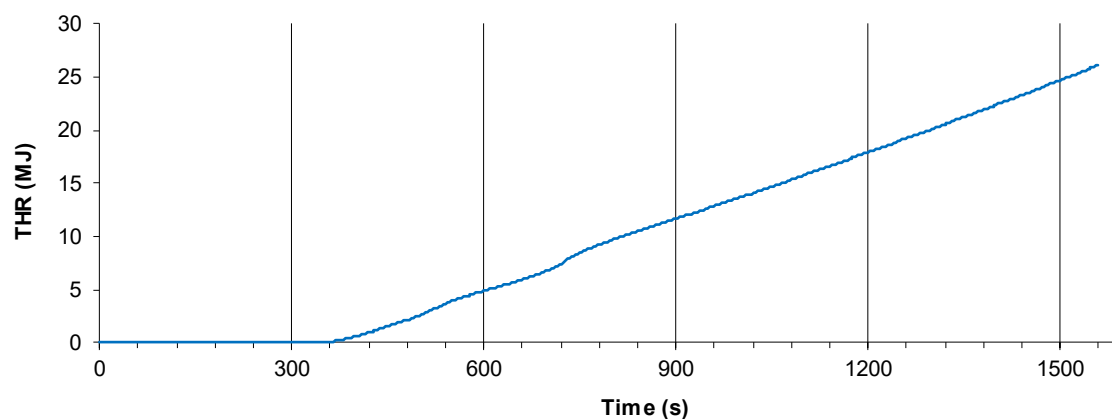


Graphs $HRR_{av}(t)$, $THR(t)$ and $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 2

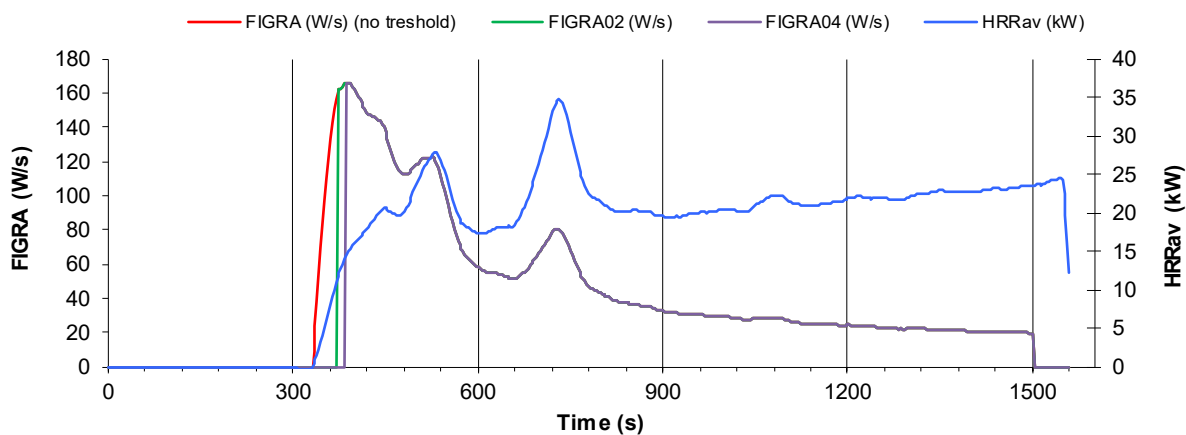
$HRR_{av}(t)$



$THR(t)$

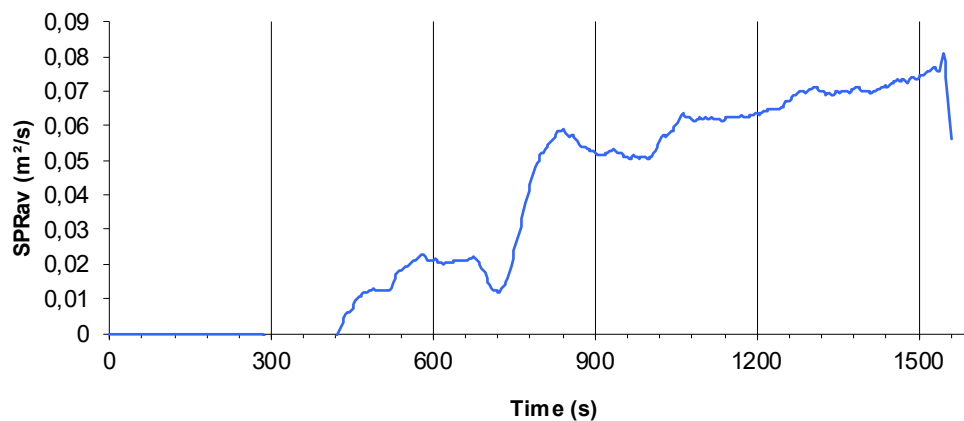


$1000 \times HRR_{av}(t) / (t-300)$

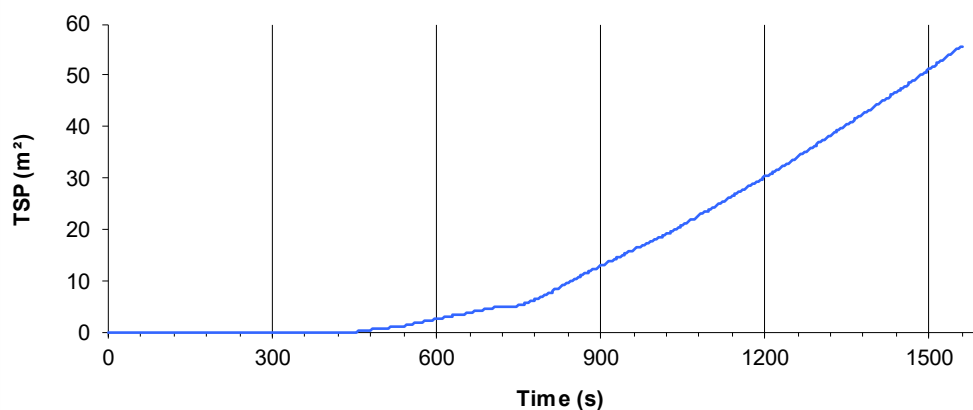


Graphs $SPR_{av}(t)$, TSP (t) and $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 2

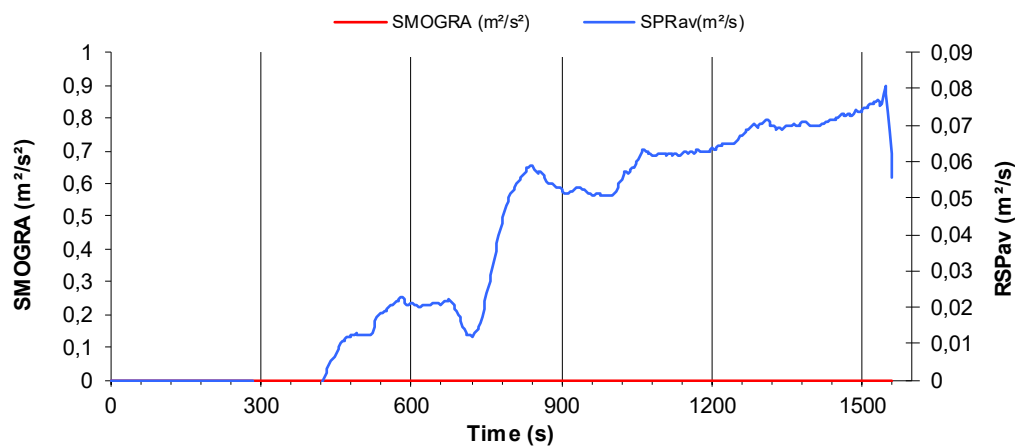
$SPR_{av}(t)$



TSP (t)

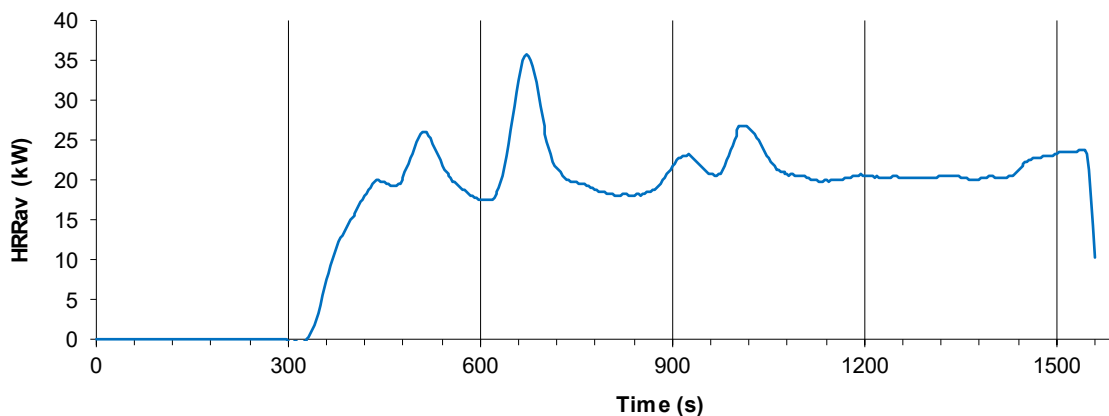


$10000 \times SPR_{av}(t) / (t-300)$

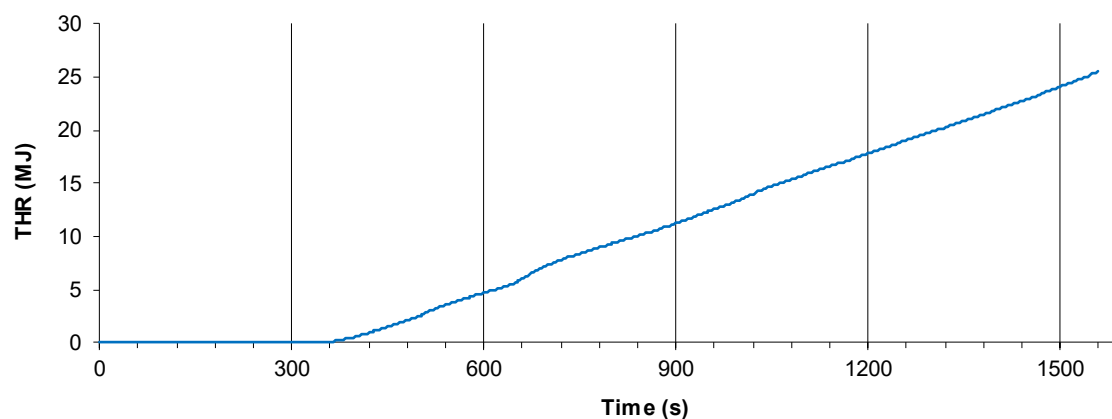


Graphs $HRR_{av}(t)$, $THR(t)$ and $1000 \times HRR_{av}(t) / (t-300)$ for specimen No. 3

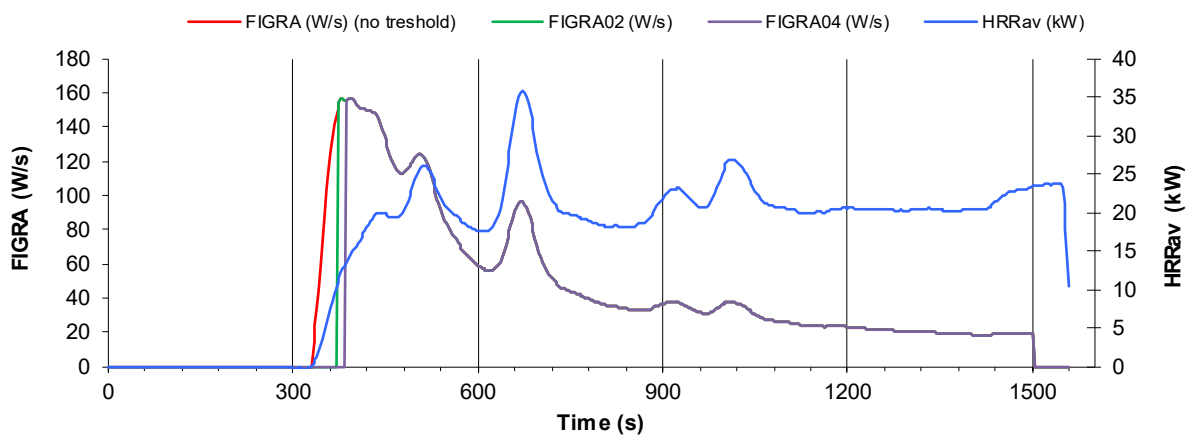
$HRR_{av}(t)$



$THR(t)$

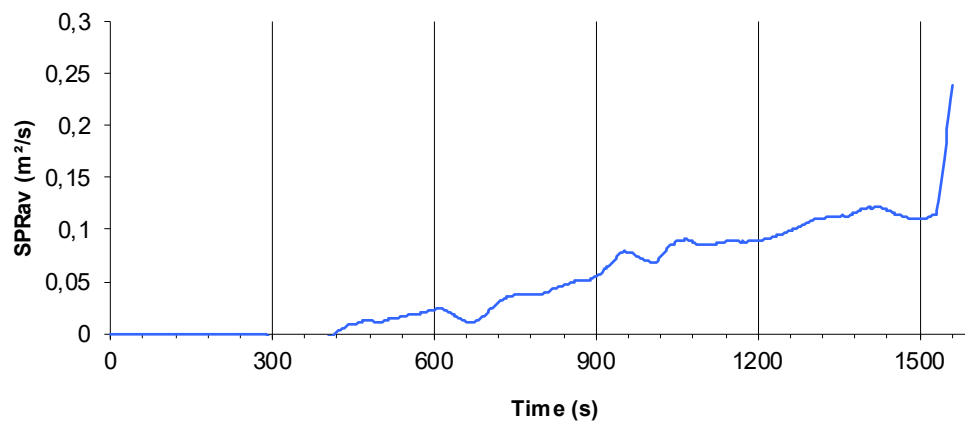


$1000 \times HRR_{av}(t) / (t-300)$

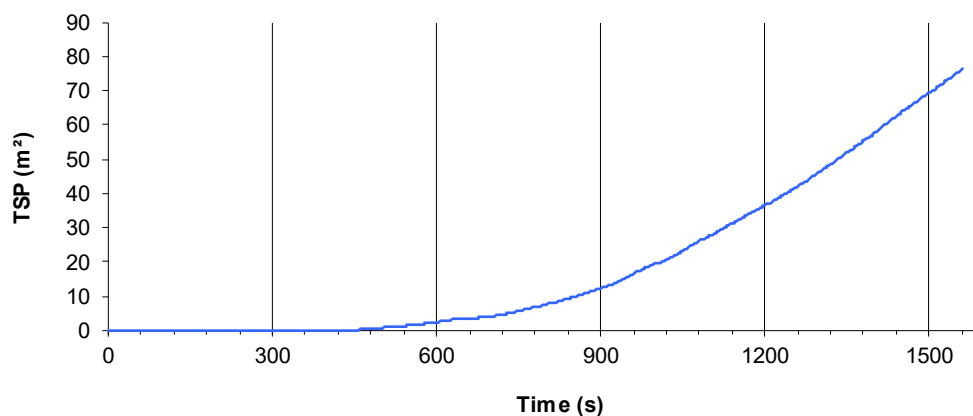


Graphs $SPR_{av}(t)$, TSP (t) and $10000 \times SPR_{av}(t) / (t-300)$ for specimen No. 3

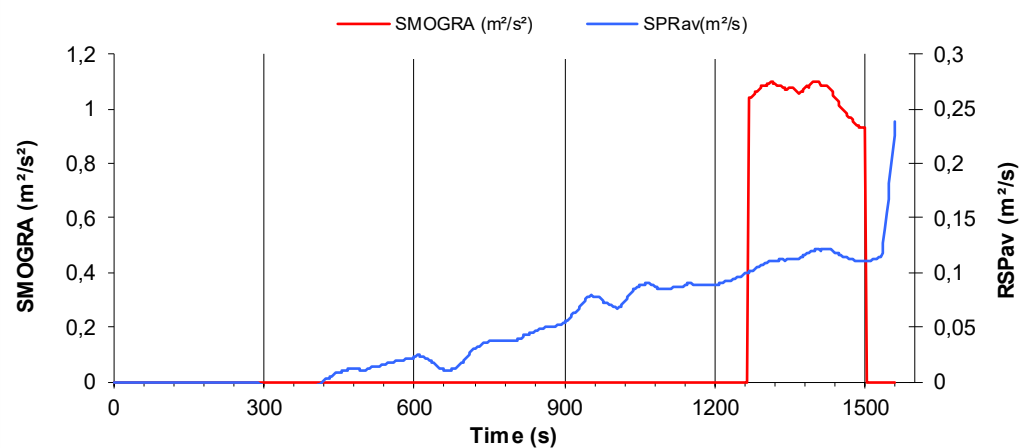
$SPR_{av}(t)$



TSP (t)



$10000 \times SPR_{av}(t) / (t-300)$



Photographs of the test specimen

SAMPLE 1: Before



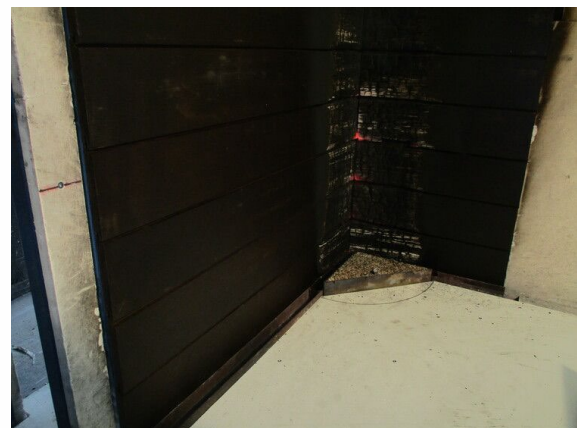
SAMPLE 1: After



SAMPLE 1: Before



SAMPLE 1: After



SAMPLE 2: Before



SAMPLE 2: After



SAMPLE 2: Before



SAMPLE 2: After



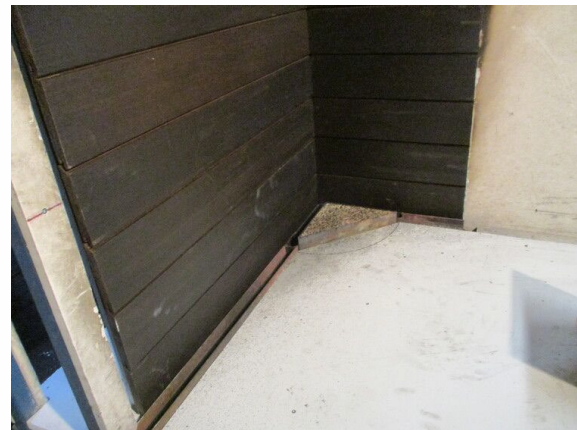
SAMPLE 3: Before



SAMPLE 3: After



SAMPLE 3: Before



SAMPLE 3: After



Calibration results

Date of calibration: 02/03/2022

