Reaction to Fire Classification Report

Burntwood 21 mm spruce with Burnblock

Client:	ØkoTømrer.dk ApS		
File no.:	PCA10604A		
Date:	2020-03-18		
Pages:	6	**Encl.:**	0
Ref:	MPA / JAG		
Notified Body No.	0845		

Danish Institute of Fire and Security Technology

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DANAK Test Reg.no. 12

Client information

Client: ØkoTømrer.dk ApS

Address: Mondrupsvej 27
DK-8260 Viby J
Denmark

Revision chronology				
Rev. no.	Date	Description	Author	Approved
0	2020-01-29		MPA	JAG
1	2020-03-18	Added test documentation on horizontally mounted test and revised field of application	MPA	JAG

1. Introduction

This classification report defines the classification assigned to the product "Burntwood 21 mm spruce with Burnblock" in accordance with the procedures given in EN 13501-1:2018.

2. Details of classified product

2.1 General

The product "Burntwood 21 mm spruce with Burnblock" is defined as a solid wood panel in accordance with:

EN 14915:2013 Solid wood paneling and cladding – Characteristics, evaluation of conformity and marking

2.2 Product description

The product "Burntwood 21 mm spruce with Burnblock" is a CE marked B-s1,d0 spruce profile from Danish Anti-Fire (certificate No. 2412-CPR-1015-04) which the client afterwards surface burns for visual purposes.

DBI refer to sampling report No. CPA00462-002/2019-12-16/Burntwood AntiFire by DBI Certification A/S (NB No. 2531).

Further product specifications are known to DBI - Danish Institute of Fire and Security Technology and are filed under the file number below.

3. Reports and results in support of this classification

3.1 Reports

Name of laboratory	Name of client	Report ref. No	Test method Field of application rules	Date
DBI	ØkoTømrer.dk ApS	PFA11475A PFA11475B	EN 13823:2010 +A1:2014 EN ISO 11925-2:2010 EN 13823:2010 +A1:2014	2020-01-21 2020-01-29 2020-03-04/10

3.2 Results

Test methods	Parameter	Number of tests[a]	Results	
			Continuous parameter mean (m)	Compliance with parameters
EN 13823	$FIGRA_{0.2\ MJ}$(W/s)	3+3	46	(-)
	$FIGRA_{0.4\ MJ}$ (W/s)	3+3	42	(-)
	THR_{600s} (MJ)	3+3	4.1	(-)
	SMOGRA (m^2/s^2)	3+3	1*	(-)
	TSP_{600s} (m^2)	3+3	30*	(-)
	LFS < edge	3+3	(-)	Y
	$FDP_{f\leq 10s}$	3+3	(-)	Y
	$FDP_{f>10s}$	3+3	(-)	Y
EN ISO 11925-2				
Surface flame attack, 30 s exposure	$F_s \leq 150$ mm within 60 s.	6	(-)	Y
	No ignition of filter paper	6	(-)	Y
Edge flame attack, 30 s exposure	$F_s \leq 150$ mm within 60 s.	6	(-)	Y
	No ignition of filter paper	6	(-)	Y

a Not for extended application
Y "Compliant"
(-) not applicable
* Based on test on new conditioned calcium silicate board and calculated using the procedure of EN 13823 Annex A.6.1.2 Note

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 11.6, 11.9 and 11.10 of EN 13501-1:2018.

4.2 Classification

The product "Burntwood 21 mm spruce with Burnblock" in relation to its reaction to fire behavior is classified: B

The additional classification in relation to smoke production is: s1

The additional classification in relation to flaming droplets/particles is: d0

Reaction to fire classification:

B-s1,d0

4.3 Field of application

The classification is valid for the following end use conditions:

- any substrates of classes D-s2,d2 or better of at least 9 mm thickness and with a density equal to or greater than 338 kg/m³
- with the product fixed mechanically to the substrate.
- with a ventilated or non-ventilated air gap or without an air gap
- with horizontal and vertical butt joints
- with the product mounted vertically or horizontally

The classification is valid for the following product parameters:

- no changes to the product allowed.

5.0 Limitations

This classification document does not represent type approval or certification of the product.

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Test report

Burntwood 21 mm spruce with Burnblock (mounted horizontally)

Name of client:	ØkoTømrer.dk ApS		
File no.:	PFA11475B		
Date:	2020-03-12		
Pages:	5	Encl.:	10
Ref:	JAG / MPA		

Danish Institute of Fire and Security Technology

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ilac-MRA DANAK Test Reg.no. 12

Client information

Client:	ØkoTømrer.dk ApS
Address:	Mondrupsvej 27
	DK-8260 Viby J
	Denmark

1. Material

Solid wood panelling and cladding

Trade name

Burntwood 21 mm spruce with Burnblock (mounted horizontally)

2. Manufacturer

The client is the manufacturer of the product by the process of surface burning the front of solid wood profiles.
Burnblock ApS is the manufacturer of the impregnation agent.
Danish Anti-Fire A/S is the manufacturer of the fire retarded spruce profiles.
See enclosures 1 and 2.

3. Nature of test

With reference to DBI Certification A/S sampling report No CPA00462-002/2019-12-16/Burntwood AntiFire dated 2019-12-17 the client desired product type determination (PTD) in accordance with EN 13823:2010 +A1:2014.

4. Sample

On 2019-12-17 DBI - Danish Institute of Fire and Security Technology received the following sample:

263 pcs. of Burntwood 21 mm spruce with Burnblock, each with dimensions 1500 x 120 x 21.5 mm. Se enclosure 3. The charring depth on the front side was determined to approx. 1-2 mm. The rear side had a light charring on some profiles.

The weight per unit length of the Burntwood 21 mm spruce with Burnblock were determined by DBI to 0.88 kg/m.

The sample was marked "CPA462 2019-12-16 TAW".

Three test specimens were prepared from the sample to EN 13823.

5. Mounting of specimen for Single Burning Item test

A standard mounting of specimen was carried out in accordance with EN 13823 as follows:

Thickness of board:	21.5 mm
Mounting:	Standard mounting option c) in clause 5.2.2 of EN 13823.
Substrate:	9 mm plywood, cf. EN 13238.
Fixing means:	Nails.

Airgap: 42 mm ventilated air gap created by horizontally oriented 21 mm wooden battens mounted onto vertically oriented 21 mm wooden battens between product and substrate.

Orientation: Horizontal.

Joints: Standard horizontal and standard vertical, cf. option e) in clause 5.2.2 of EN 13823.

The specimens were assembled by DBI.

6. Conditioning

On 2019-12-17 the specimens were stored in a conditioning room with an atmosphere of relative humidity of 50 ± 5 % and a temperature of 23 ± 2 °C. The test specimens were kept in this room until the tests were performed.

7. Test method

The test was performed in accordance with:

EN 13823:2010 + A1:2014 Reaction to fire tests for building products - Building products excluding flooring exposed to the thermal attack by a single burning item

8. Test results

Date of test: 2020-03-04/10

3 tests were performed.

During the tests the following measurements were made: Volume flow in the exhaust duct, production of carbon dioxide, concentration of oxygen, and production of light-obscuring smoke. Based on these measurements the rate of heat release and the rate of smoke production were calculated.

The graphs, enclosures 4-7, show for the 3 tests performed:

Enclosure 4
- Average Heat Release Rate $HRR_{av}(t)$
- Total Heat Release THR (t)

Enclosure 5
- Average Heat Release Rate per unit time [1000 x $HRR_{av}(t)/(t-300)$]
- $Figra_{0.2MJ}$-values

Enclosure 6
- $Figra_{0.4\ MJ}$-values
- Smoke Production Rate $SPR_{av}(t)$

Enclosure 7
- Total Smoke Production TSP(t)
- Smoke Production Rate per unit time [10000 x $SPR_{av}(t)/(t-300)$]

The test results are shown in the following table

	Test No. 1	Test No. 2	Test No. 3	**Mean value**
$FIGRA_{0.2\ MJ}$ [W/s]	53.0	48.0	37.6	**46**
$FIGRA_{0.4\ MJ}$ [W/s]	49.3	40.7	37.2	**42**
THR_{600s} [MJ]	4.49	4.12	3.54	**4.1**
SMOGRA [m^2/s^2]	1.0*	0.9*	1.3*	**1***
$TSP_{600\ s}$ [m^2]	26.7*	29.5*	35.1*	**30***
$FDP_{f\leq 10s}$ [yes/no]	No	No	No	**-**
$FDP_{f>10s}$ [yes/no]	No	No	No	**-**
LFS < edge of specimen [yes/no]	Yes	Yes	Yes	**-**

*Based on test on new conditioned calcium silicate board and calculated using the procedure of EN 13823 AnnexA.6.1.2 Note

$FDP_{f\leq 10s}$: Flaming Droplets/Particles burning less than 10 seconds.
$FDP_{f>10s}$: Flaming Droplets/Particles burning more than 10 seconds.
LFS: Lateral Flame Spread on the long wing of the test specimen.

No events of importance occurred during the tests.

Photographs of the test specimens show the effect of the damages, see enclosures 8-10

Enclosure 8: Test No. 1
Enclosure 9: Test No. 2
Enclosure 10: Test No. 3

9. Statement

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.

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CERTIFICATE OF CONSTANCY OF PERFORMANCE

2412-CPR-1015-04

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9th March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product

Solid wood paneling and cladding
as specified in appendix to this certificate,
for uses subject to reaction to fire regulations
Fire-retardant treatment
Classifications: B-s1,d0 and B-s2,d0

Product name: Burnblock

produced by the manufacturer

Danish Anti-Fire ApS
Theilgaards Torv 9
DK-4600 Koege
Denmark

and produced in the manufacturing plant at
Overgade 11B
6670 Holsted, Denmark

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 14915:2013

under system 1 are applied and that

the factory production control fulfills all the prescribed requirements set out above.

This certificate has been issued first time on 29th of December 2017. It will remain valid as long as the test methods and factory production control requirements included in the harmonized standard, used to assess the performance of the declared characteristics, do not change, and the manufacturing conditions in the plant are not modified significantly. The validity of the certificate can be checked on the internet address www.finotrol.fi

The certificate is issued on 21th of November 2018

Kari Kuhmonen
Technical Director

FINAS
Finnish Accreditation Service
S038 (EN ISO/IEC 17065)

Finotrol Oy
Teollisuuskatu 3, FI-50130 Mikkeli, Finland
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Finotrol

Appendix to certificate 2412-CPR-1015-03 (last update 21.11.2018)

Danish Anti-Fire ApS
Theilgaards Torv 9
DK-4600 Koege
Denmark

Certificate of Constancy of Performance

2412 – CPR – 1015 – 04 appendix

Fire retardant: Burnblock, manufactured by Burnblock ApS Wilders Plads 8A, DK-1401 Copenhagen K

Product/Wood species	Nominal density range kg/m^3	Thickness (mm)	Average dry-uptake kg/m^3	Reaction to fire (Euroclass)	According to report
Accoya panel	500 - 550	≥ 19	≥ 78	B-s1,d0	SP 6P07344-1
Cedar panel	350 - 450	≥ 12,5	≥ 38	B-s2,d0	PCA10396C
Larch*)1 panel	650 - 750	≥ 22	≥ 36,5	B-s1,d0	PCA10396B
Oak	500 – 750	≥ 20	≥ 16	B-s1,d0	SP 5P06680-1rev1
Pine panel	500	≥ 21	≥ 38	B-s1,d0	SP 5P08096-2
Spruce panel	450	≥ 21	≥ 35	B-s1,d0	SP 3P07054-2
Thermo ash panel	650	≥ 21,5	≥ 48	B-s1,d0	PCA10396A
Thermo Ayous*)2	400 – 700	≥ 15	30 - 58	B-s1,d0	RISE 8P00680-3
Thermo-D pine panel*)3	350 - 550	≥ 19	43	B-s1,d0	PCA10479A*

*)1 Larix sibirica
*)2 Thermo Ayous (Wawa / Abachi / Samba)
*)3 Thermowood pine (Pinus sylvestris)

Applied in a vacuum-pressure impregnation process

Substrates: Classes with a thickness and density given in the Declaration of performance (DoP)

Joints and mounting: Given in the Declaration of performance (DoP)

Fixings: Mechanically fixed

Void: No void

*)3 Thermo-D pine panel: Average amount of the fire retardant 43 kg/m^3 (ratio 31–52 kg/m^3). Fixed mechanically directly to the substrate or mounted with a ventilated or non-ventilated air gap between product and substrate.

*PCA10479A last version dated 19.6.2018

CE

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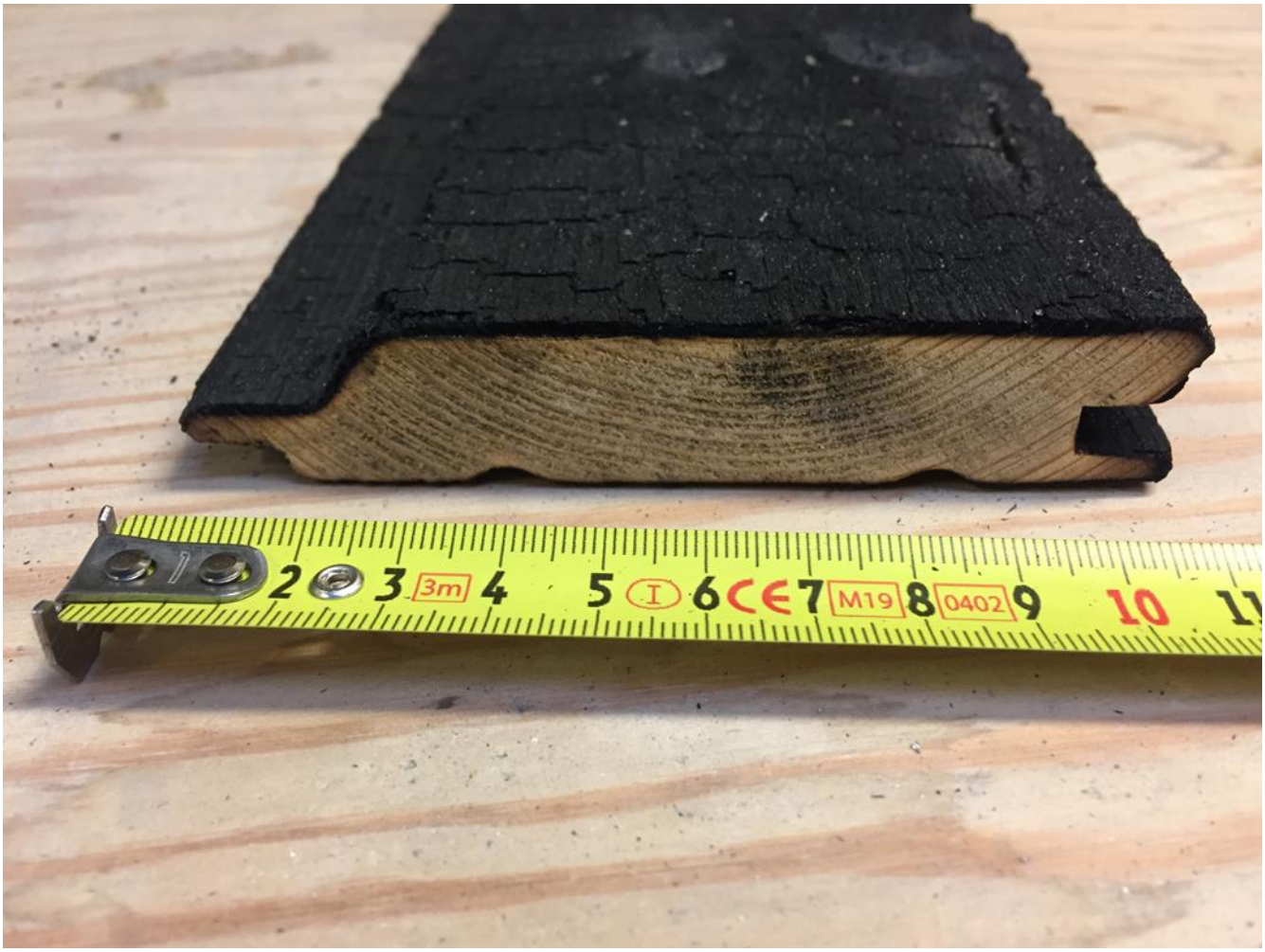
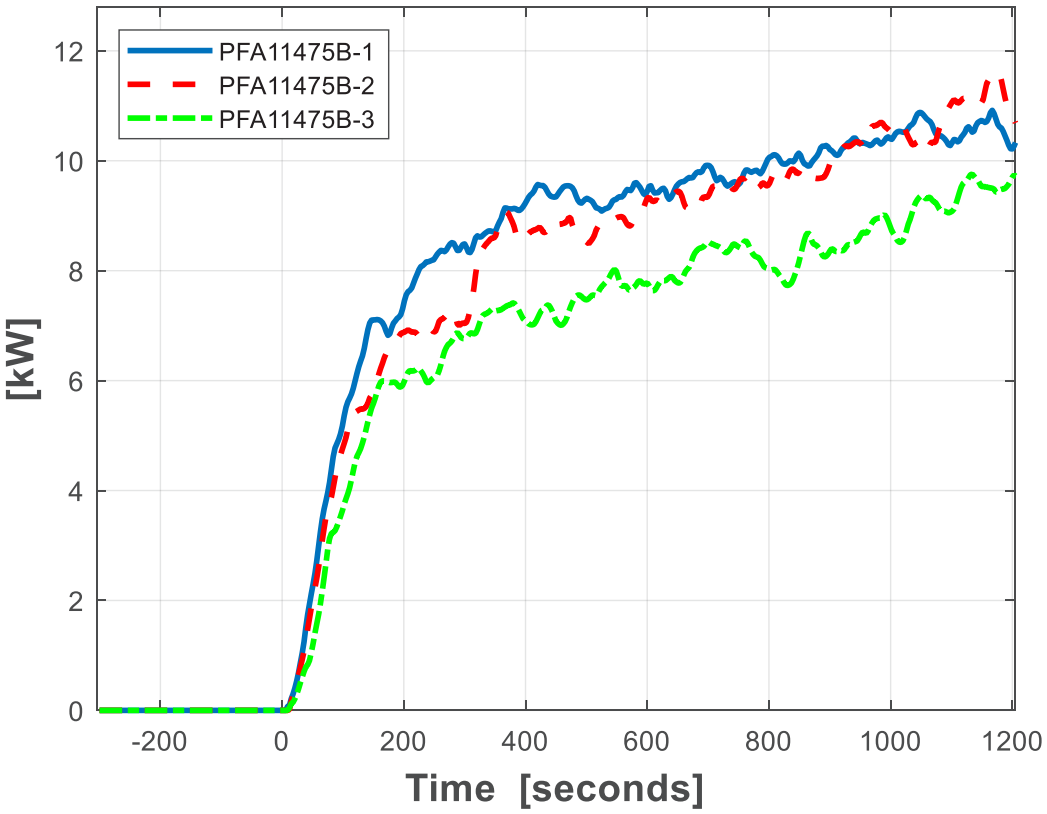
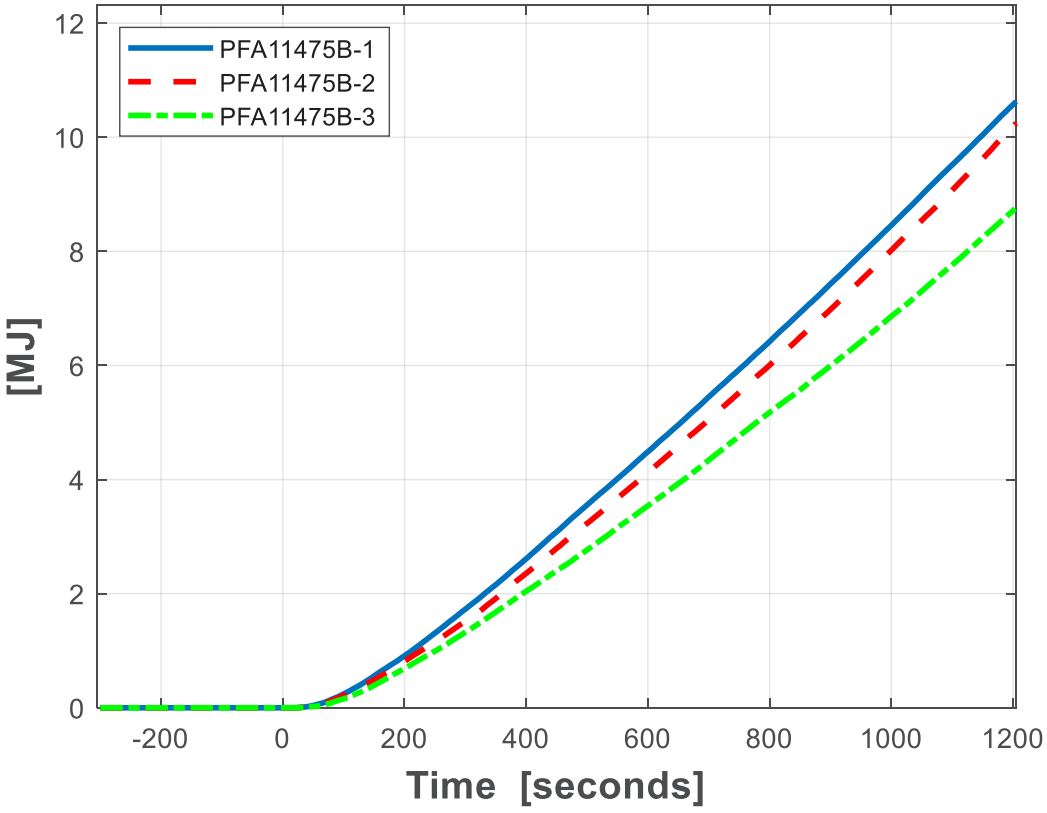
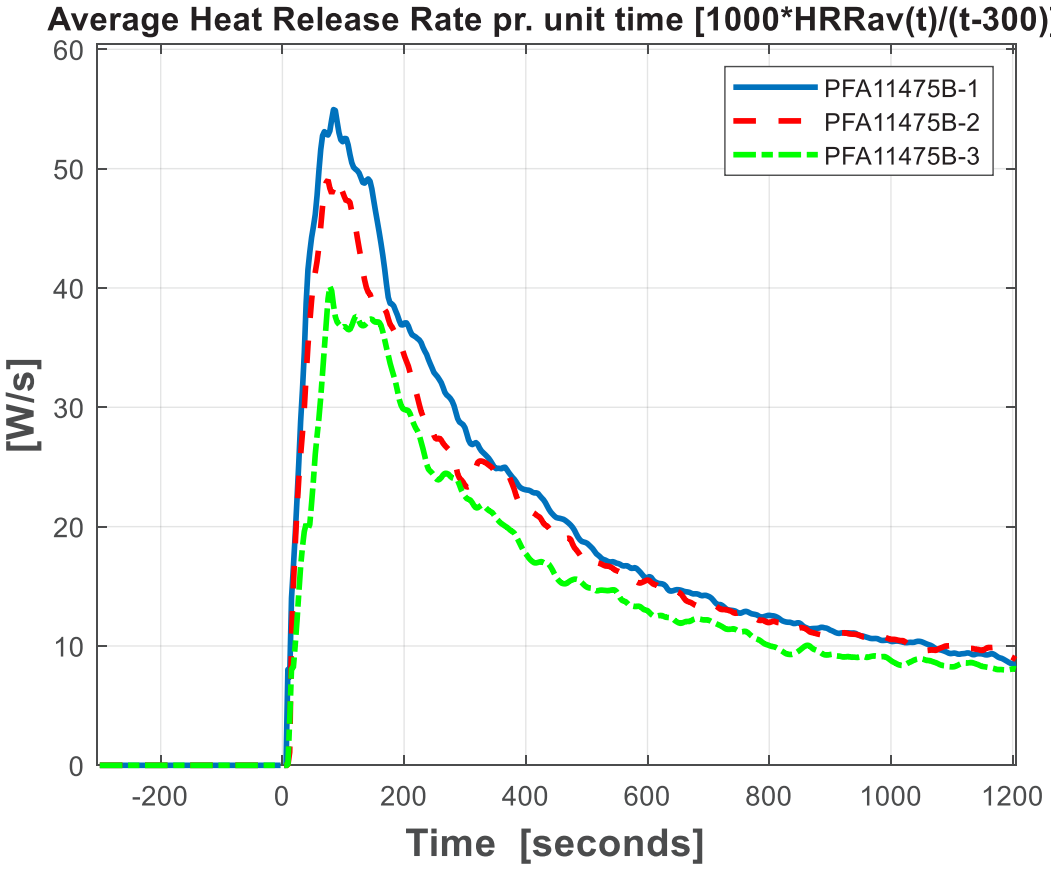

2
3
3m
4
5
6
7
M19
8
0402
9
10

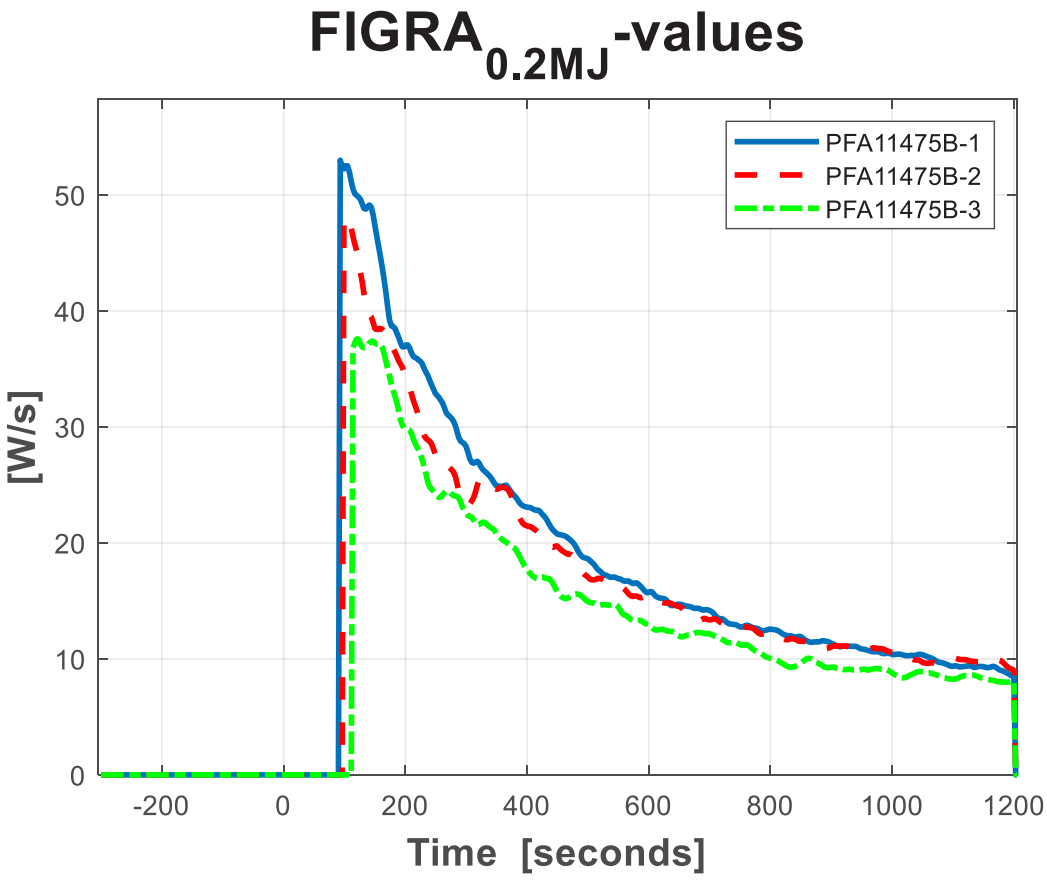
Average Heat Release Rate HRRav(t)

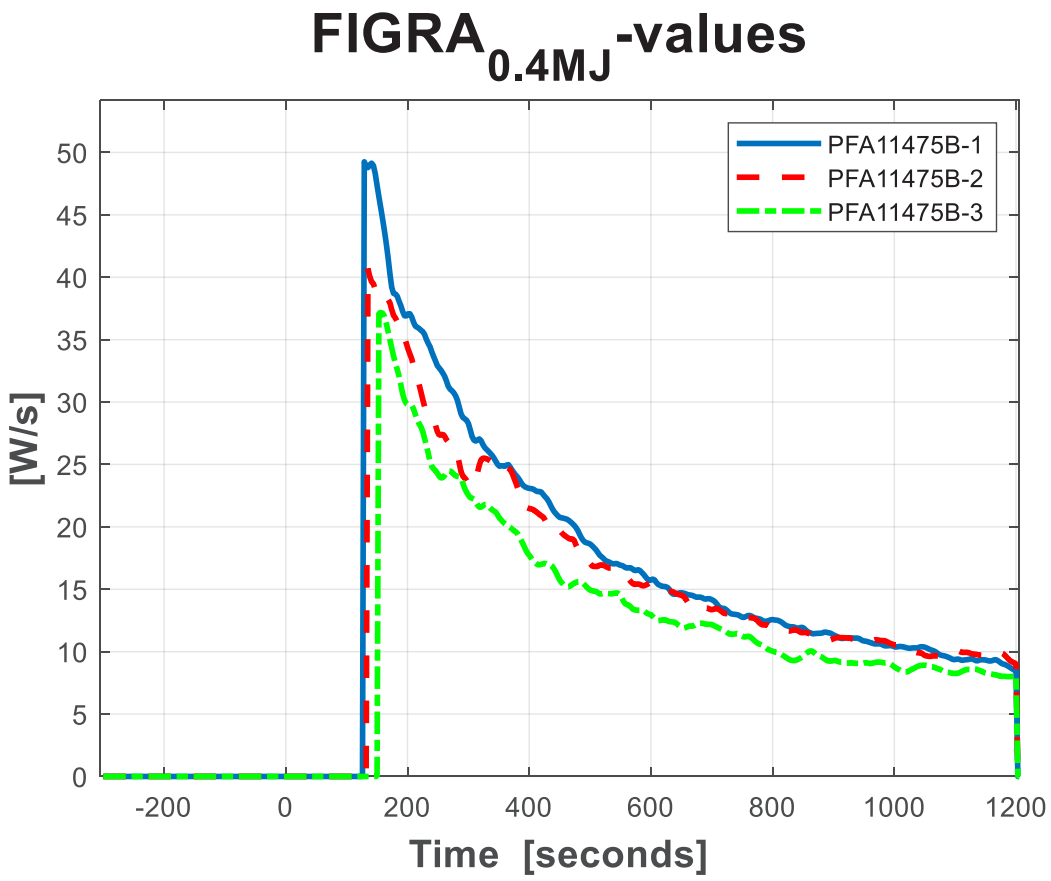


Total Heat Release THR(t)




Average Heat Release Rate pr. unit time [1000*HRRav(t)/(t-300)]
PFA11475B-1
PFA11475B-2
PFA11475B-3
[W/s]
Time [seconds]
0
10
20
30
40
50
60
-200
0
200
400
600
800
1000
1200


FIGRA0.2MJ-values
PFA11475B-1
PFA11475B-2
PFA11475B-3
[W/s]
Time [seconds]
0
10
20
30
40
50
-200
0
200
400
600
800
1000
1200


FIGRA0.4MJ-values
PFA11475B-1
PFA11475B-2
PFA11475B-3
[W/s]
Time [seconds]
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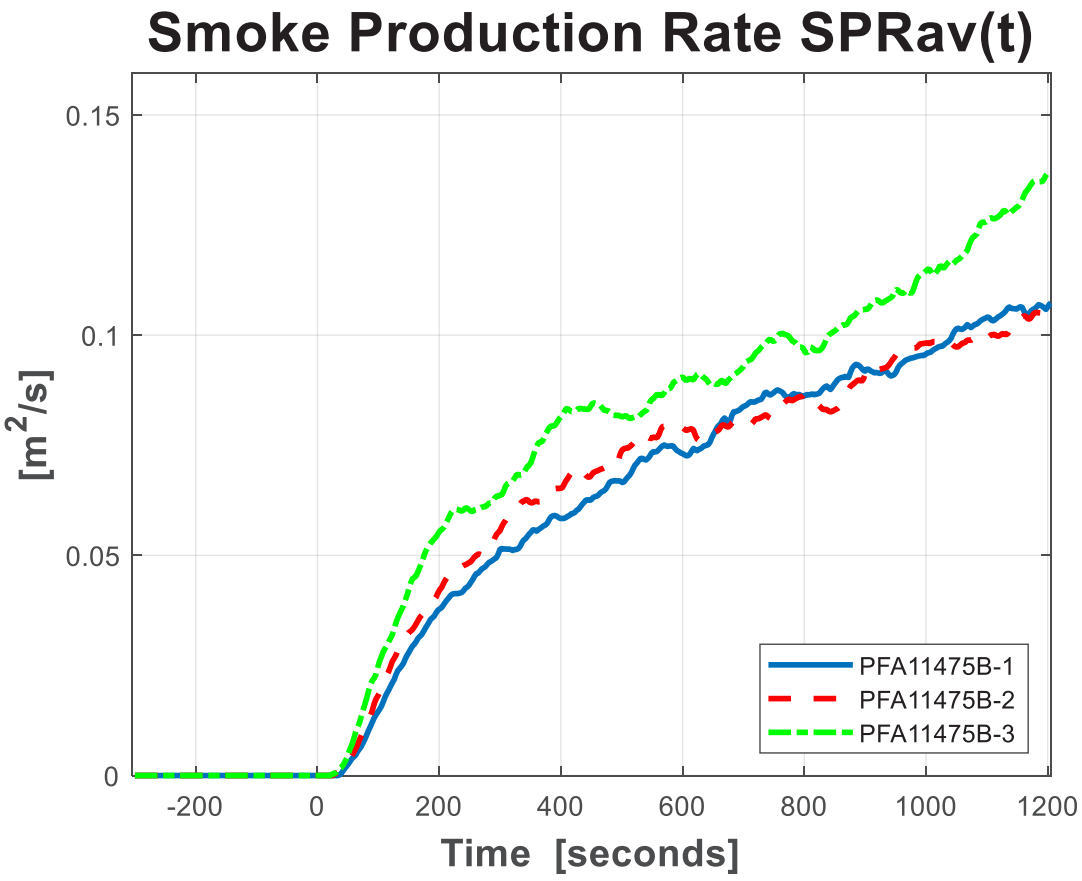
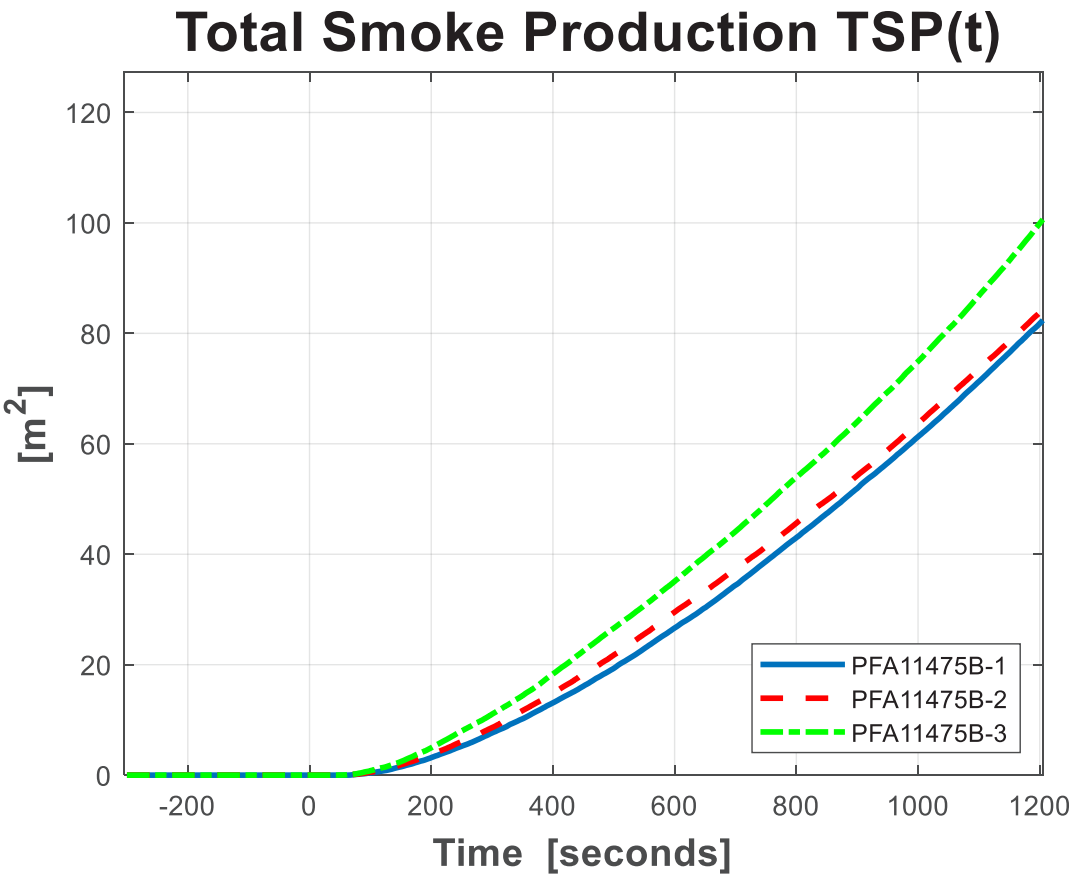
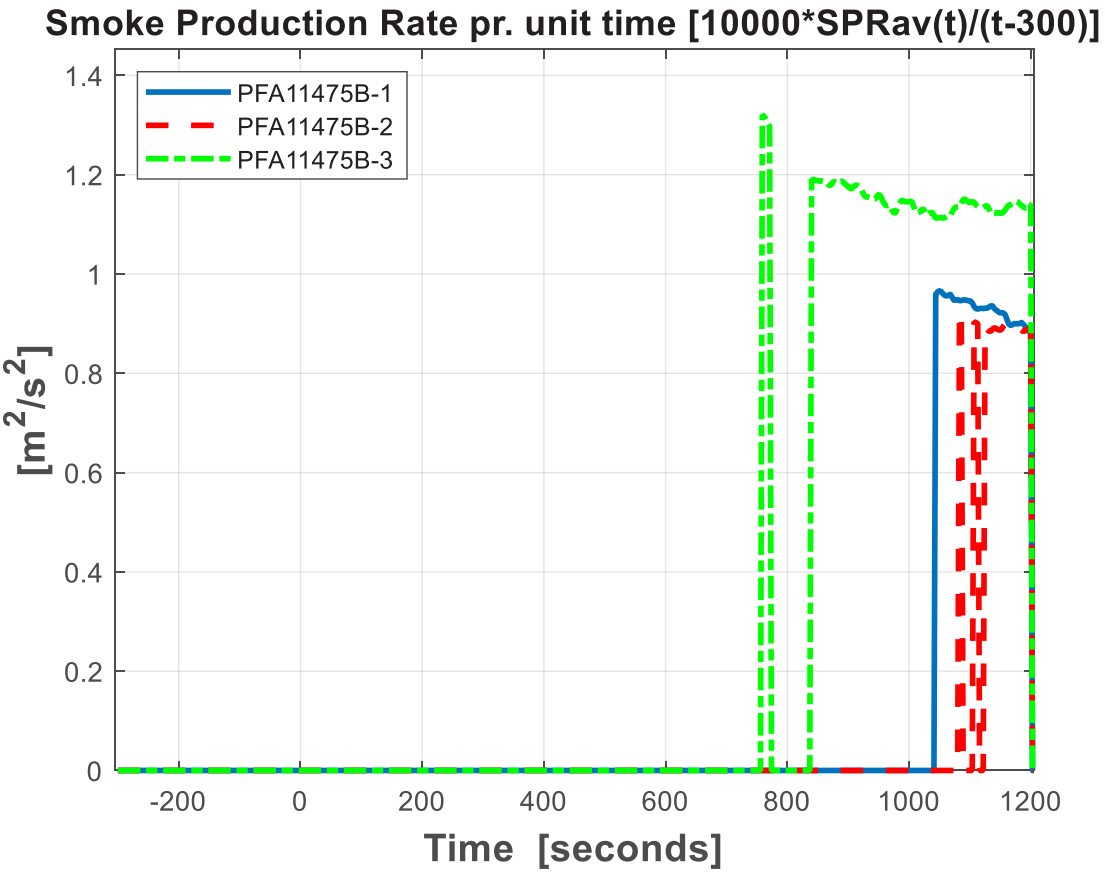
5
10
15
20
25
30
35
40
45
50
-200
0
200
400
600
800
1000
1200

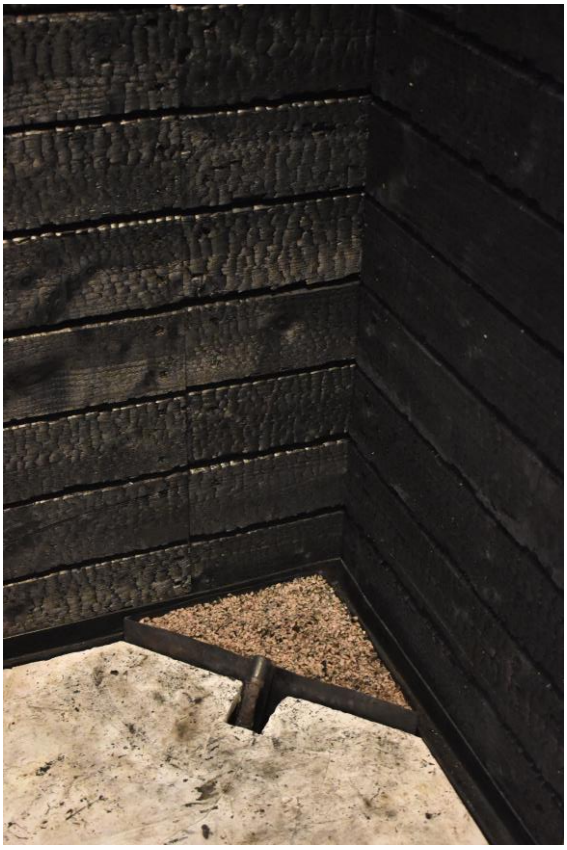

Smoke Production Rate SPRav(t)
PFA11475B-1
PFA11475B-2
PFA11475B-3
[m2/s]
Time [seconds]
0
0.05
0.1
0.15
-200
0
200
400
600
800
1000
1200


Total Smoke Production TSP(t)
[m2]
Time [seconds]
PFA11475B-1
PFA11475B-2
PFA11475B-3


Smoke Production Rate pr. unit time [10000*SPRav(t)/(t-300)]
[m2/s2]
Time [seconds]
PFA11475B-1
PFA11475B-2
PFA11475B-3

TEST NO. 1

TEST NO. 2



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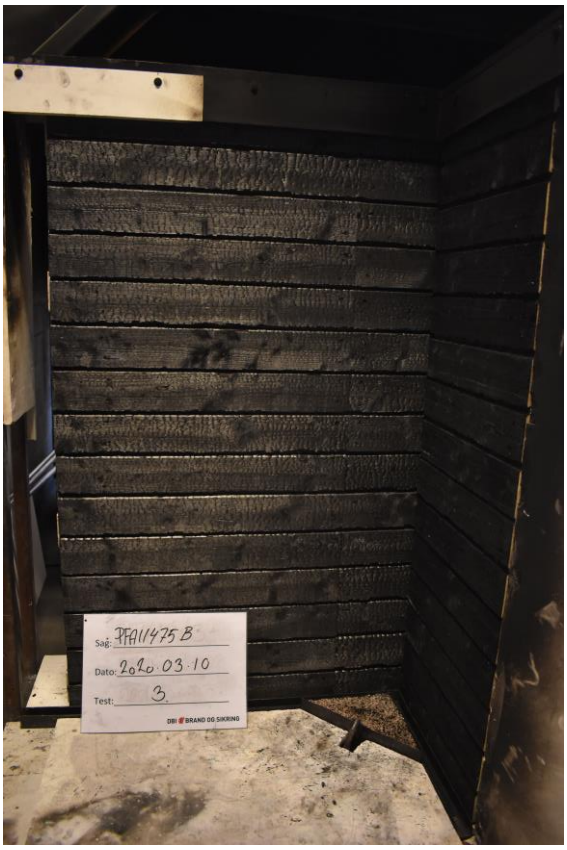
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Dato: 2020.03.10
Test: 3


Sag: PFA11475 B
Dato: 2020.03.10
Test: 3