

TEST REPORT

Customer: Antalis International

Address: 8, rue de Seine
92 100 Boulogne-Billancourt
France

Request: Tests according standard NP EN 13501-1: 2007

Material Reference: Coala Textile Double View

Request Reference: Email

Request Date: 2016-12-21

Reception Date: 2016-12-19

Test Date: 2017-01-09 to 2017-01-16

Report N. 48/LFF/16Bi

Determination of Fire Reaction Classification

1 - Scope

The tests reported concern the determination of the fire reaction class for a two side coated fabric with reference **Coala Textile Double View** to be used on billboards.

2 - Methodology

The tests were performed as indicated in the standard EN ISO 11925-2 issued of 2010 and standard EN 13823:2010+A1 issued of 2014. The classification method was applied according the standard NP EN 13051-1:2007+A1 issued of 2013.

3 - Specimens

3.1 - Dimension and conditioning

The specimens were prepared by the costumer and had the following dimensions:

Specimens	Length (mm)	Width (mm)	Thickness (mm)	Mass (g)
48/LFF/16i/01	1500	1002	0.3	506.9
48/LFF/16i/01	1500	500	0.3	260.9
48/LFF/16i/02	1502	1004	0.3	501.6
48/LFF/16i/02	1500	503	0.3	253.4
48/LFF/16i/03	1501	1001	0.3	500.3
48/LFF/16i/03	1500	501	0.3	250.6
48/LFF/16i/04	251	91	0.3	7.7
48/LFF/16i/05	251	90	0.3	7.7
48/LFF/16i/06	251	90	0.3	7.8
48/LFF/16i/07	249	90	0.3	7.6
48/LFF/16i/08	250	90	0.3	7.6
48/LFF/16i/09	249	90	0.3	7.5
48/LFF/16i/10	250	90	0.3	7.5
48/LFF/16i/11	251	89	0.3	7.7
48/LFF/16i/12	251	90	0.3	7.7
48/LFF/16i/13	250	90	0.3	7.9
48/LFF/16i/14	250	90	0.3	7.8
48/LFF/16i/15	250	90	0.3	7.8

Before being tested the specimens were conditioned for a minimum period of 500 hours at 23 ± 2 °C and 50 ± 5 % relative humidity

3.2 – Mounting of specimens

Boards are tested free standing (paragraph 5.2.2.a. of EN 13823 standard).

4 - Results

4.1 – Ignitability test (EN ISO 11925-2)

Position of flame application	Edge
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Specimens	48/LFF/16i/0 4	48/LFF/16i/0 5	48/LFF/16i/0 6	48/LFF/16i/0 7	48/LFF/16i/0 8	48/LFF/16i/0 9
Flame application time (s)	30	30	30	30	30	30
Ignition (s)	2	1	1	1	1	1
F _s (mm)	Not reached	Not reached	Not reached	Not reached	Not reached	Not reached
Droplets/Particles	No	No	No	No	No	No
Ignition of the filter paper	No	No	No	No	No	No

F_s: Vertical Flame Spread

Position of flame application	Surface
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Specimens	48/LFF/16i/1 0	48/LFF/16i/1 1	48/LFF/16i/1 2	48/LFF/16i/1 3	48/LFF/16i/1 4	48/LFF/16i/1 5
Flame application time (s)	30	30	30	30	30	30
Ignition (s)	3	2	3	4	2	3
F _s (mm)	Not reached	Not reached	Not reached	Not reached	Not reached	Not reached
Droplets/Particles	No	No	No	No	No	No
Ignition of the filter paper	No	No	No	No	No	No

F_s: Vertical Flame Spread

4.2 – Single burning item test (EN 13823)

Specimens	48/LFF/16i/01	48/LFF/16i/02	48/LFF/16i/03	AVERAGE
FIGRA 0,2 MJ (W/s)	Threshold not reached	Threshold not reached	Threshold not reached	Threshold not reached
THR _{600s} (MJ)	0.2	0.5	0.1	0.3
LFS (m)	No	No	No	No
FIRE BEHAVIOUR	A2/B	A2/B	A2/B	A2/B
SMOGRA (m ² /s ²)	45.0	69.9	35.0	50.0
TSP _{600s} (m ²)	37.7	102.1	45.9	61.9
SMOKE PRODUCTION	s2	s2	s2	s2
FLAMING DROPLETS/PARTICLES	No	No	No	No
FLAMING DROPLETS	d0	d0	d0	d0

FIGRA: Fire growth rate THR: Total heat release LFS: Lateral flame spread

SMOGRA: Smoke growth rate TSP: Total smoke production

5 - Conclusion

Considering all the results and according the EN 13501-1 standard, it can be concluded that the material should be included in the following classification:

Fire behaviour		Smoke Production		Flaming droplets
B	-	s	2	, d 0

This classification is valid if material is applied free standing.

Porto, January 17, 2017

Technical Manager



João Rodrigues

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.

ANNEX 1

Photographs of the mounting specimens

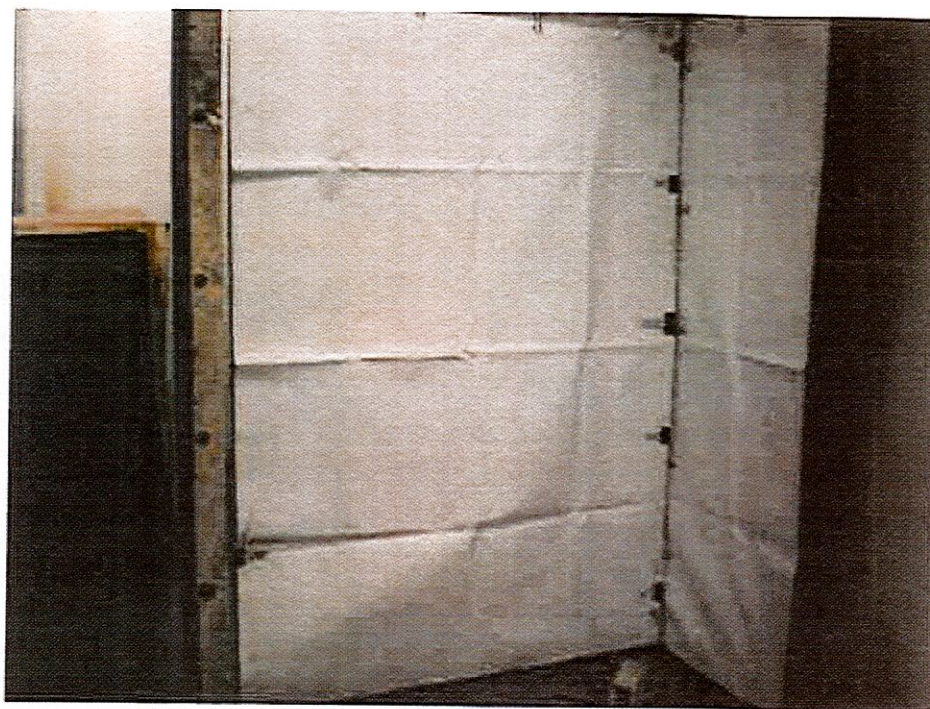


Figure 1 – View of mounting.

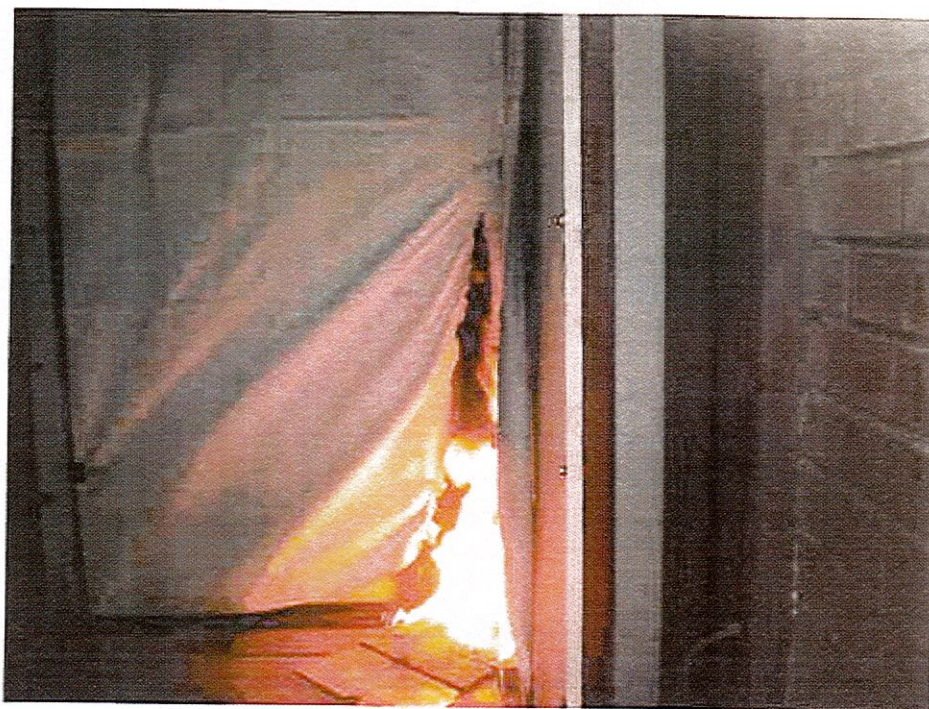


Figure 2 – The SBI test.



Figure 3 – The SBI test.

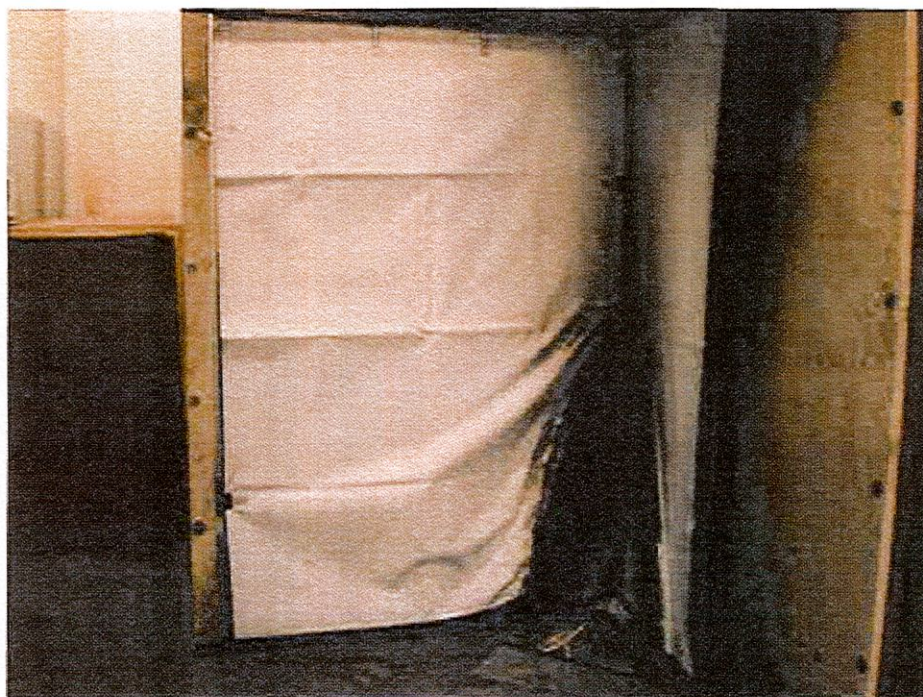


Figure 4 – Specimens following testing in the SBI.

ANNEX 2

SBI Test Reports

SBI Test Report

Laboratory name LFF
 Operator João Rodrigues
 Filename C:\SBICALC\DATA\17010001.RW1
 Report identification 48/LFF/16/01

Test		Pre-test conditions		Specimen conditioning	
Standard used	EN 13823:2010	Baseline duct temperature	295.44 K	Method	Constant mass
Date of test	13/01/2017	Ambient temperature	295.67 K	Time interval	578 hours
Date of report	13/01/2017	Ambient pressure	101.735 kPa	Mass 1	507 g
E'	17.2 MJ/m ³	Relative humidity	40%	Mass 2	261 g
Apparatus specifications		Baseline conditions		Temperature	23°C
kt	0.892	Baseline ambient oxygen	20.728%	RH	50%
kp	1.08	Baseline oxygen	20.951%		
Duct diameter	0.315 m	Baseline carbon dioxide	0.0807%		
O2 calibration delay time	15 s	Baseline smoke	100.12%		
CO2 calibration delay time	11 s				

Specimen information

Thickness	0.3 mm	Mounting method	5.2.2a) in EN 13823:2002
Density		Joints	none
Surface mass/area	0.34 kg/m ²	Fixed to substrate?	No
Specimen number		Fixing method	N/A
Date of arrival	19/12/2016	Substrate	none
		Manufacturer	Endutex - Revestimentos Têxteis, SA
		Sponsor	

Test validity criteria

Test drifts

	Initial	Final	Change
Oxygen	20.951%	20.946%	0.005%
CO2	0.081%	0.077%	0.003%
Smoke	100.12%	99.29%	0.008

Exposure time 1254 s

Synchronisation details

Duct temp. dropped by 2.5 K from baseline of 318.15 K at 303 s
 Oxygen rose by 0.05% from baseline of 20.676% at 303 s
 CO2 dropped by 0.02% from baseline of 0.297% at 300 s

Burner details

Burner HRR	29.956 kW
Burner HRR std. dev.	0.642 kW
Burner CO2/O2 ratio	0.785
Burner SPR	0.031 m ² /s
Burner SPR std. dev.	0.005 m ² /s
Burner response time (s)	24 s

Other checks

Minimum duct flow	0.569 m ³ /s
Maximum duct flow	0.667 m ³ /s
Possible T/C1 & T/C3 failure	

Classification results

FIGRA(0.2)	threshold not reached
FIGRA(0.4)	threshold not reached
THR(600)	0.2 MJ
SMOGR	45.0 cm ² /s ² at 336 s
TSP(600)	37.7 m ²

Classification observations

LFS to edge?	No
FDP flaming <= 10s?	No
FDP flaming > 10s?	No

Potential classification

Class	A2/B
Smoke production	s2
Flaming droplets/particles	d0

Recorded events

Surface flashes? No; Falling specimen parts? No; Smoke not entering hood? No
 Mutual fixing of backing board failed? No; Distortion/collapse of specimen? No

Pre-test comments

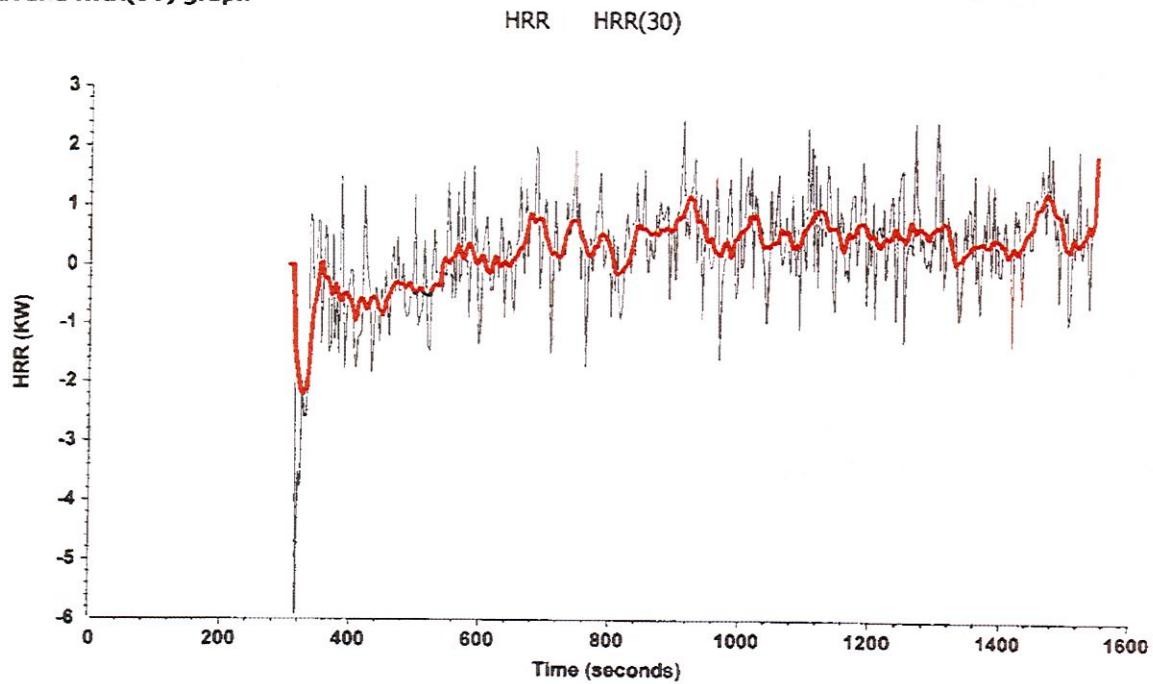
After-test comments

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.

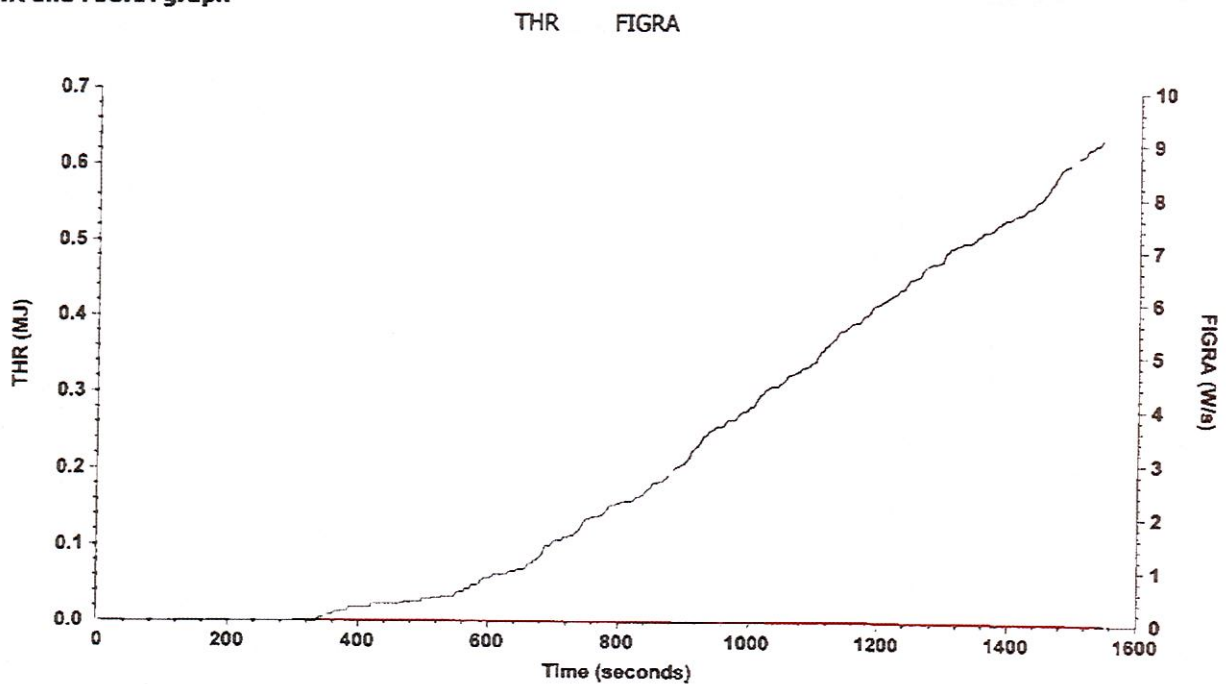
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010001.RW1
Report identification 48/LFF/16/01

HRR and HRR(30) graph



THR and FIGRA graph



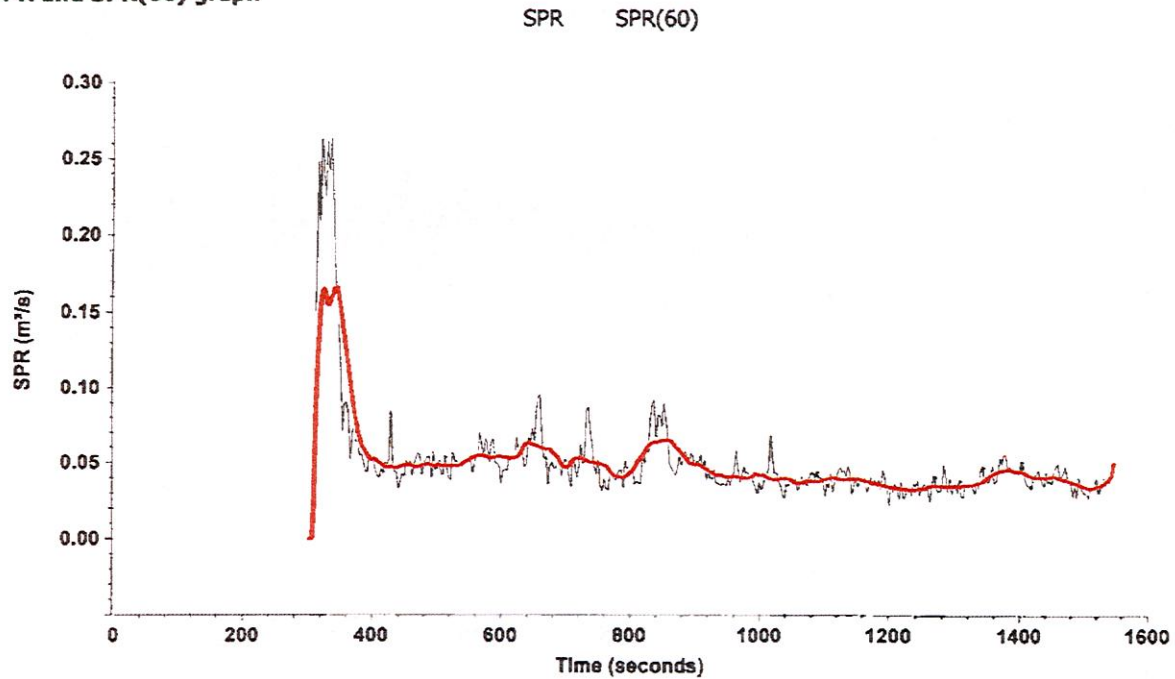
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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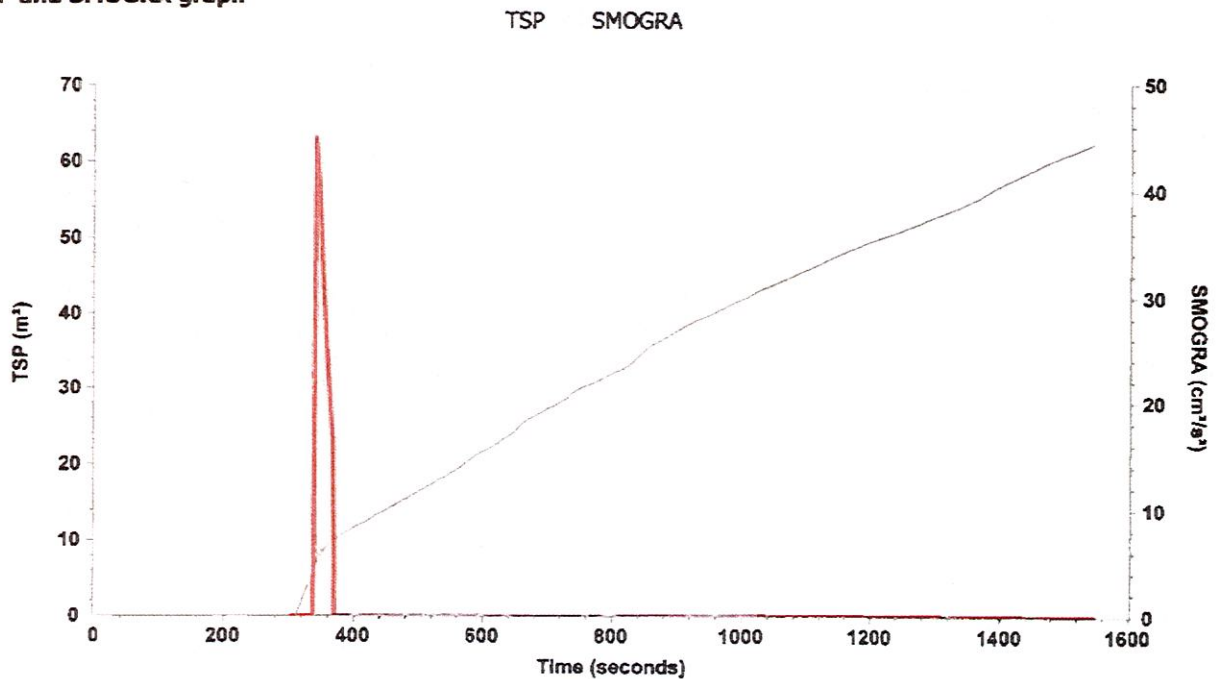
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010001.RW1
Report identification 48/LFF/16/01

SPR and SPR(60) graph



TSP and SMOGRA graph



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SBI Test Report

Laboratory name LFF
 Operator João Rodrigues
 Filename C:\SBICALC\DATA\17010002.RW1
 Report identification 48/LFF/16/02

Test	Pre-test conditions	Specimen conditioning
Standard used EN 13823:2010	Baseline duct temperature 294.67 K	Method Constant mass
Date of test 16/01/2017	Ambient temperature 294.40 K	Time interval 670 hours
Date of report 16/01/2017	Ambient pressure 101.903 kPa	Mass 1 502 g
E' 17.2 MJ/m ²	Relative humidity 45%	Mass 2 253 g
		Temperature 23°C
		RH 50%
Apparatus specifications	Baseline conditions	
kt 0.892	Baseline ambient oxygen 20.711%	
kp 1.08	Baseline oxygen 20.949%	
Duct diameter 0.315 m	Baseline carbon dioxide 0.0813%	
O2 calibration delay time 15 s	Baseline smoke 100.08%	
CO2 calibration delay time 11 s		

Specimen information

Thickness	Mounting method	5.2.2a) in EN 13823:2002
Density	Joints	none
Surface mass/area 0.34 kg/m ²	Fixed to substrate?	No
Specimen number	Fixing method	N/A
Date of arrival 19/12/2016	Substrate	none
	Manufacturer	Endutex - Revestimentos Têxteis, SA
	Sponsor	

Test validity criteria

Test drifts

	Initial	Final	Change
Oxygen	20.949%	20.936%	0.013%
CO2	0.081%	0.084%	0.003%
Smoke	100.08%	98.99%	0.011

Exposure time 1254 s

Synchronisation details

Duct temp. dropped by 2.5 K from baseline of 317.51 K at 303 s
 Oxygen rose by 0.05% from baseline of 20.673% at 303 s
 CO2 dropped by 0.02% from baseline of 0.301% at 300 s

Burner details

Burner HRR	29.637 kW
Burner HRR std. dev.	0.796 kW
Burner CO2/O2 ratio	0.794
Burner SPR	0.023 m ² /s
Burner SPR std. dev.	0.004 m ² /s
Burner response time (s)	15 s

Other checks

Minimum duct flow	0.573 m ³ /s
Maximum duct flow	0.670 m ³ /s
No T/C failure	

Classification results

FIGRA(0.2)	threshold not reached
FIGRA(0.4)	threshold not reached
THR(600)	0.5 MJ
SMOGR	69.9 cm ² /s ² at 330 s
TSP(600)	102.1 m ²

Classification observations

LFS to edge?	No
FDP flaming ≤ 10s?	No
FDP flaming > 10s?	No

Potential classification

Class	A2/B
Smoke production	s2
Flaming droplets/particles	d0

Recorded events

Surface flashes? No; Falling specimen parts? No; Smoke not entering hood? No
 Mutual fixing of backing board failed? No; Distortion/collapse of specimen? No

Pre-test comments

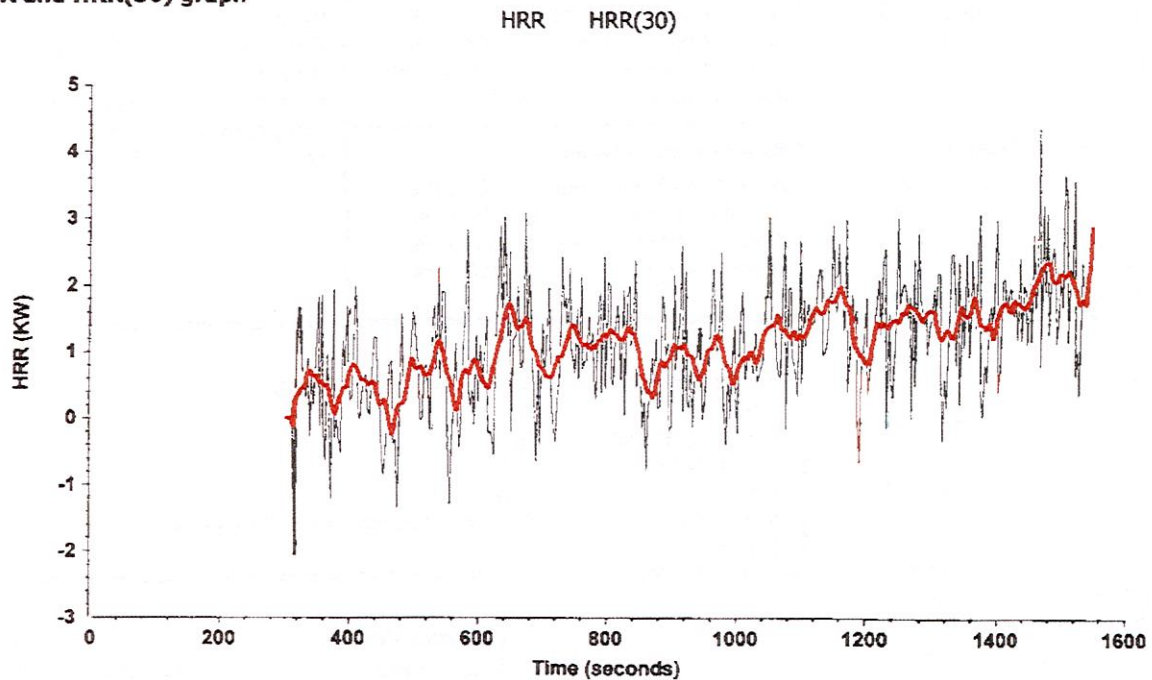
After-test comments

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.

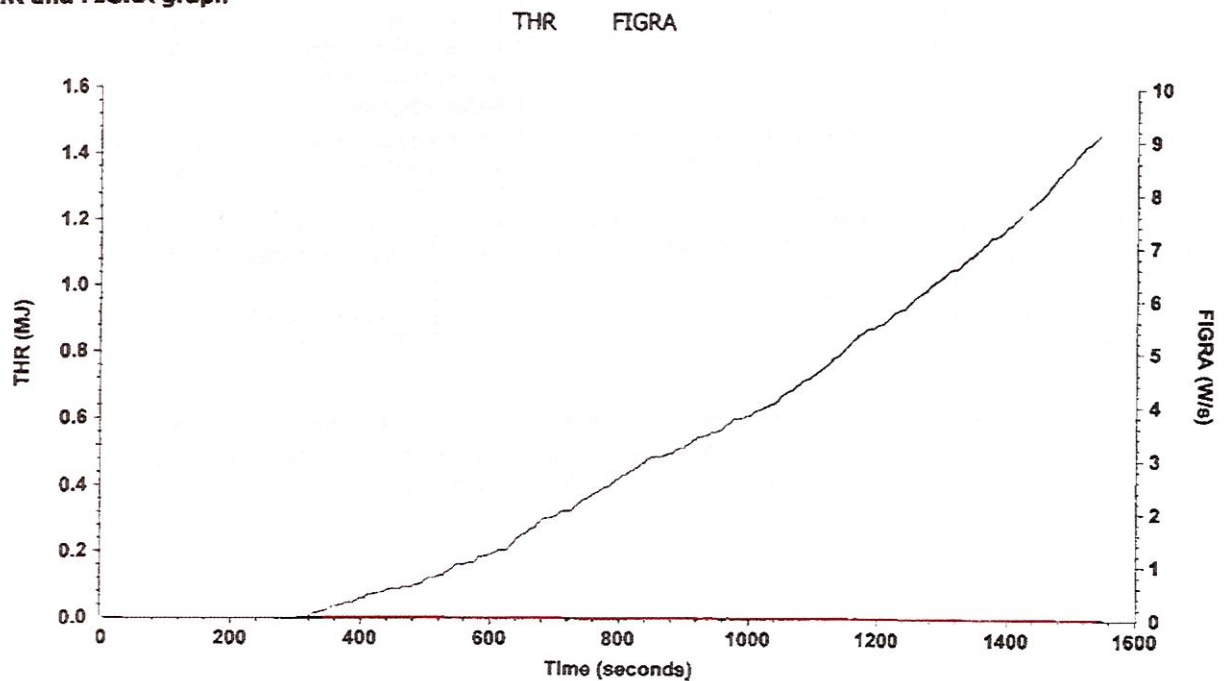
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010002.RW1
Report identification 48/LFF/16/02

HRR and HRR(30) graph



THR and FIGRA graph

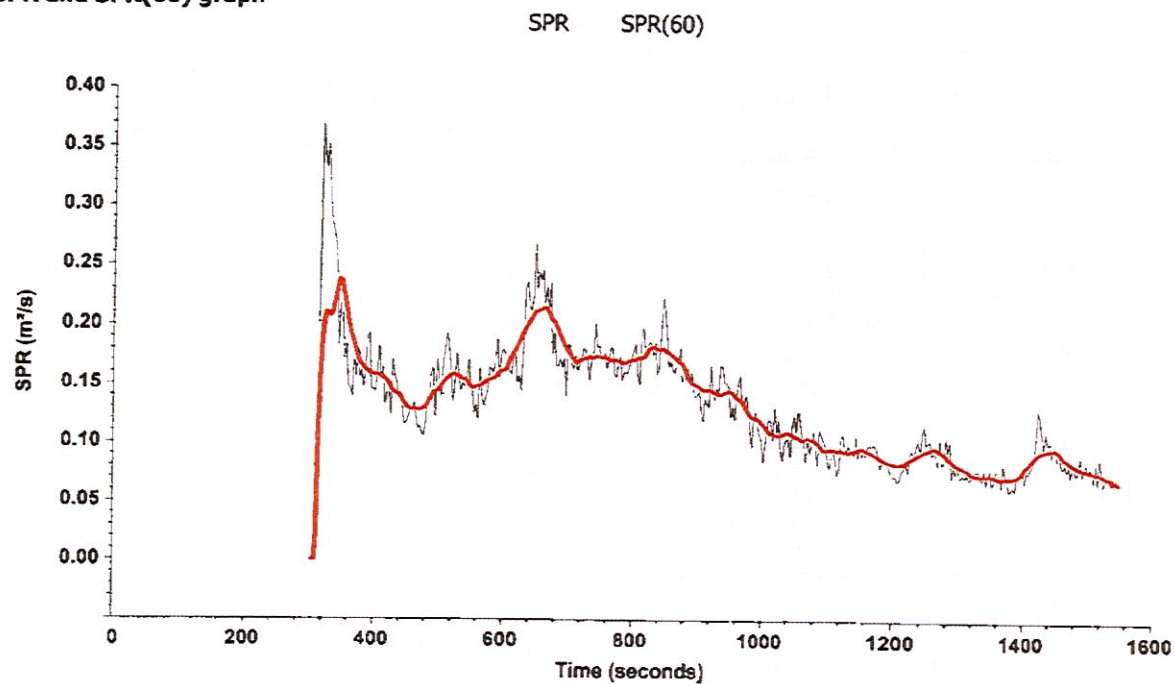


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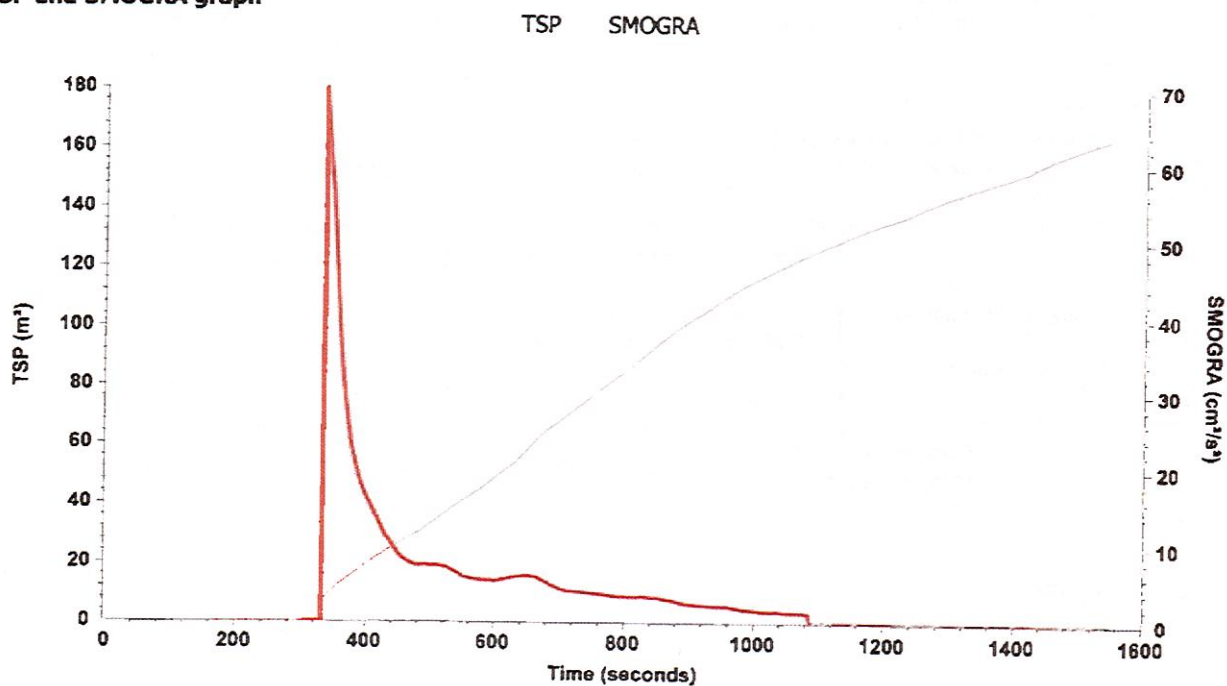
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010002.RW1
Report identification 48/LFF/16/02

SPR and SPR(60) graph



TSP and SMOGRA graph



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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SBI Test Report

Laboratory name LFF
 Operator João Rodrigues
 Filename C:\SBICALC\DATA\17010003.RW1
 Report identification 48/LFF/16/03

Test		Pre-test conditions		Specimen conditioning	
Standard used	EN 13823:2010	Baseline duct temperature	294.86 K	Method	Constant mass
Date of test	16/01/2017	Ambient temperature	294.77 K	Time interval	674 hours
Date of report	16/01/2017	Ambient pressure	101.564 kPa	Mass 1	500 g
E'	17.2 MJ/m³	Relative humidity	44%	Mass 2	251 g
Apparatus specifications		Baseline conditions		Temperature	23°C
kt	0.892	Baseline ambient oxygen	20.716%	RH	50%
kp	1.08	Baseline oxygen	20.952%		
Duct diameter	0.315 m	Baseline carbon dioxide	0.0768%		
O2 calibration delay time	15 s	Baseline smoke	99.93%		
CO2 calibration delay time	11 s				

Specimen information

Thickness		Mounting method	5.2.2a) in EN 13823:2002
Density		Joints	none
Surface mass/area	0.34 kg/m ²	Fixed to substrate?	No
Specimen number		Fixing method	N/A
Date of arrival	19/12/2016	Substrate	none
		Manufacturer	Endutex - Revestimentos Têxteis, SA
		Sponsor	

Test validity criteria

Test drifts

	Initial	Final	Change
Oxygen	20.952%	20.943%	0.010%
CO2	0.077%	0.079%	0.002%
Smoke	99.93%	98.38%	0.016

Exposure time 1254 s

Synchronisation details

Duct temp. dropped by 2.5 K from baseline of 317.58 K at 303 s
 Oxygen rose by 0.05% from baseline of 20.676% at 303 s
 CO2 dropped by 0.02% from baseline of 0.296% at 300 s

Burner details

Burner HRR	29.836 kW
Burner HRR std. dev.	0.757 kW
Burner CO2/O2 ratio	0.794
Burner SPR	0.033 m ² /s
Burner SPR std. dev.	0.004 m ² /s
Burner response time (s)	24 s

Other checks

Minimum duct flow	0.575 m ³ /s
Maximum duct flow	0.683 m ³ /s
Possible T/C1 & T/C3 failure	

Classification results

FIGRA(0.2)	threshold not reached
FIGRA(0.4)	threshold not reached
THR(600)	0.1 MJ
SMOGRA	35.0 cm ² /s ² at 345 s
TSP(600)	45.9 m ²

Classification observations

LFS to edge?	No
FDP flaming <= 10s?	No
FDP flaming > 10s?	No

Potential classification

Class	A2/B
Smoke production	s2
Flaming droplets/particles	d0

Recorded events

Surface flashes? No; Falling specimen parts? No; Smoke not entering hood? No
 Mutual fixing of backing board failed? No; Distortion/collapse of specimen? No

Pre-test comments

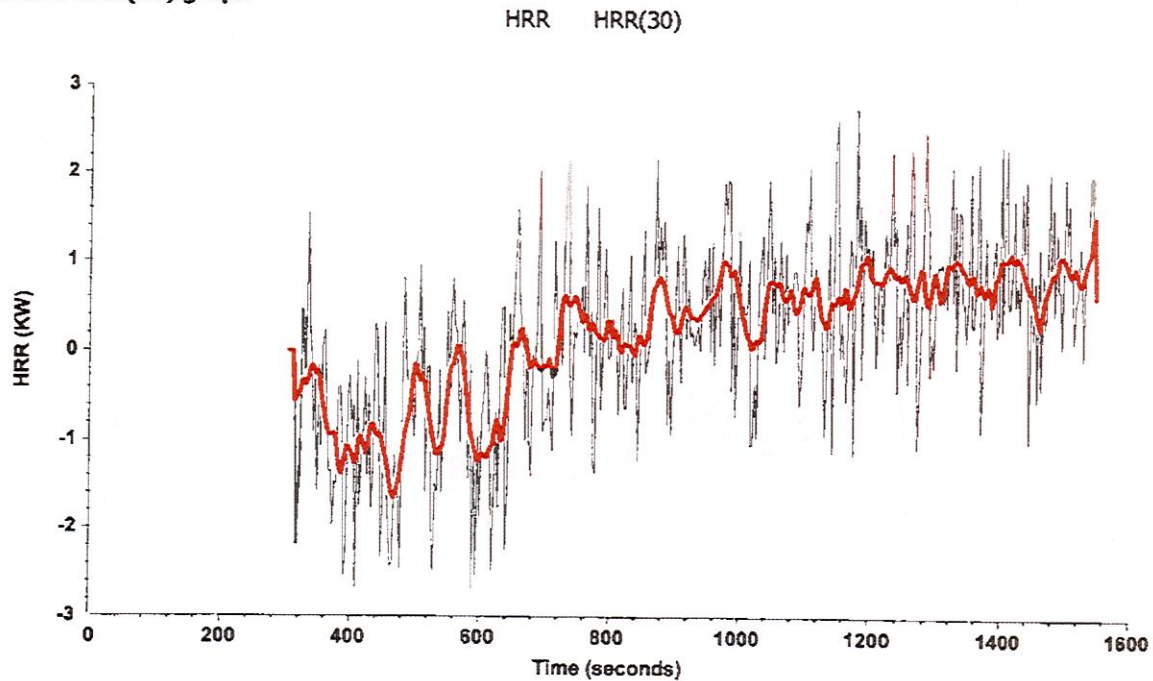
After-test comments

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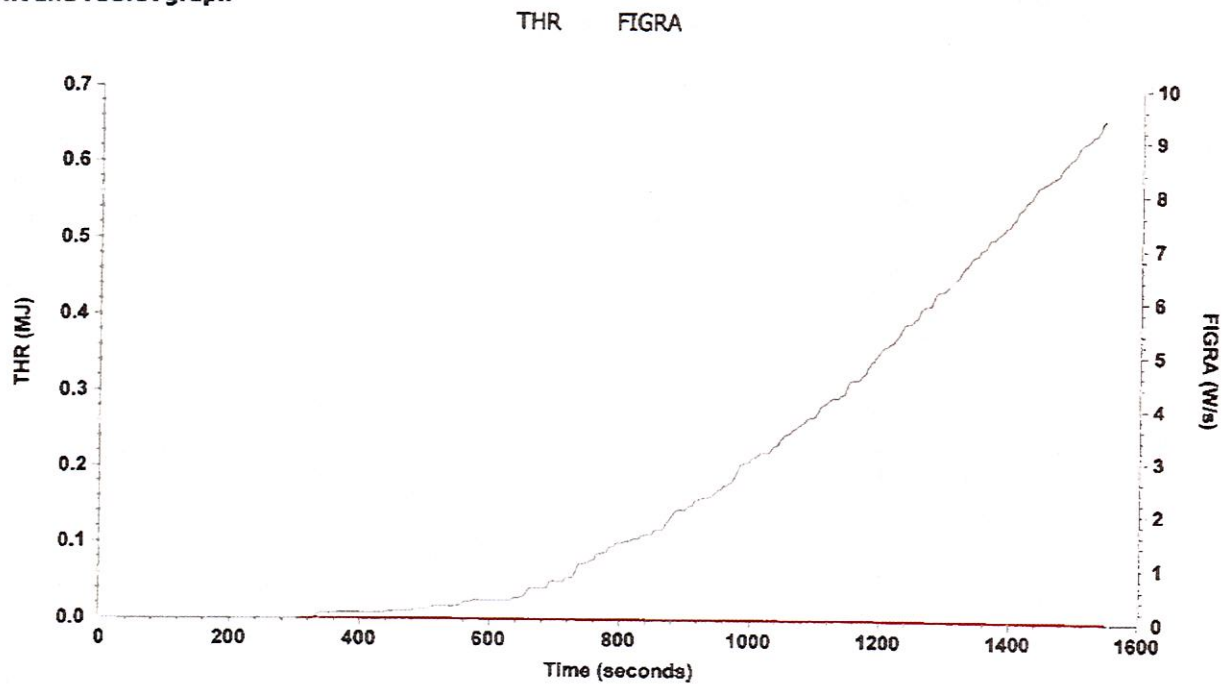
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010003.RW1
Report identification 48/LFF/16/03

HRR and HRR(30) graph



THR and FIGRA graph



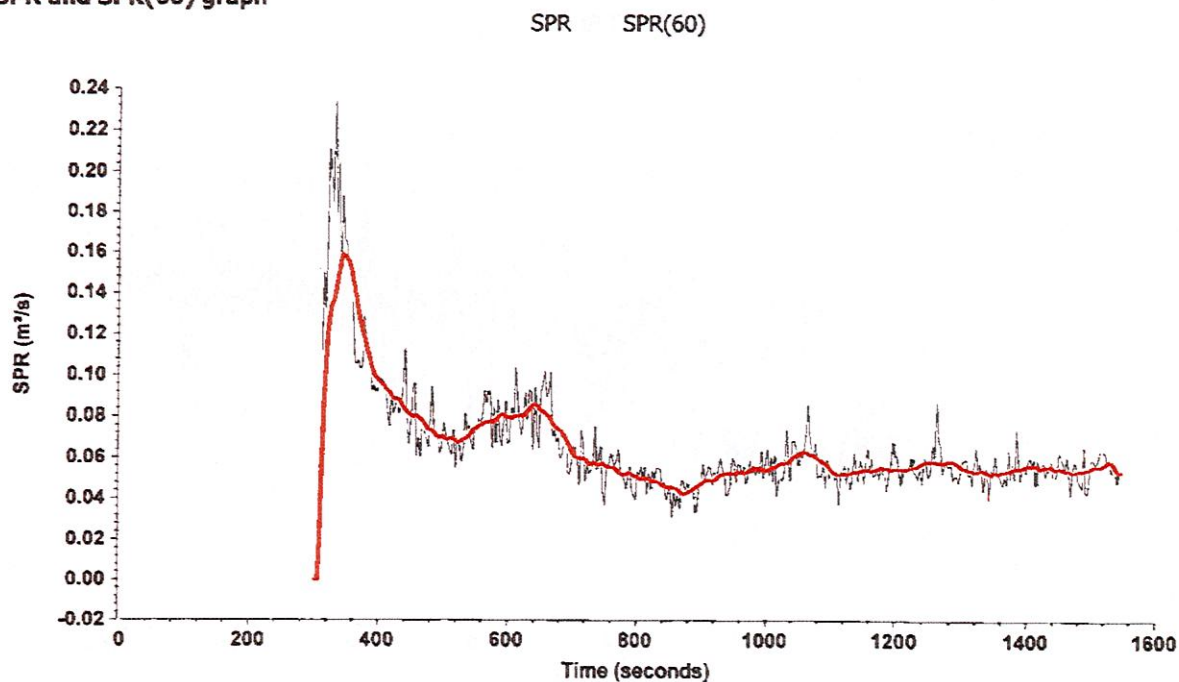
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

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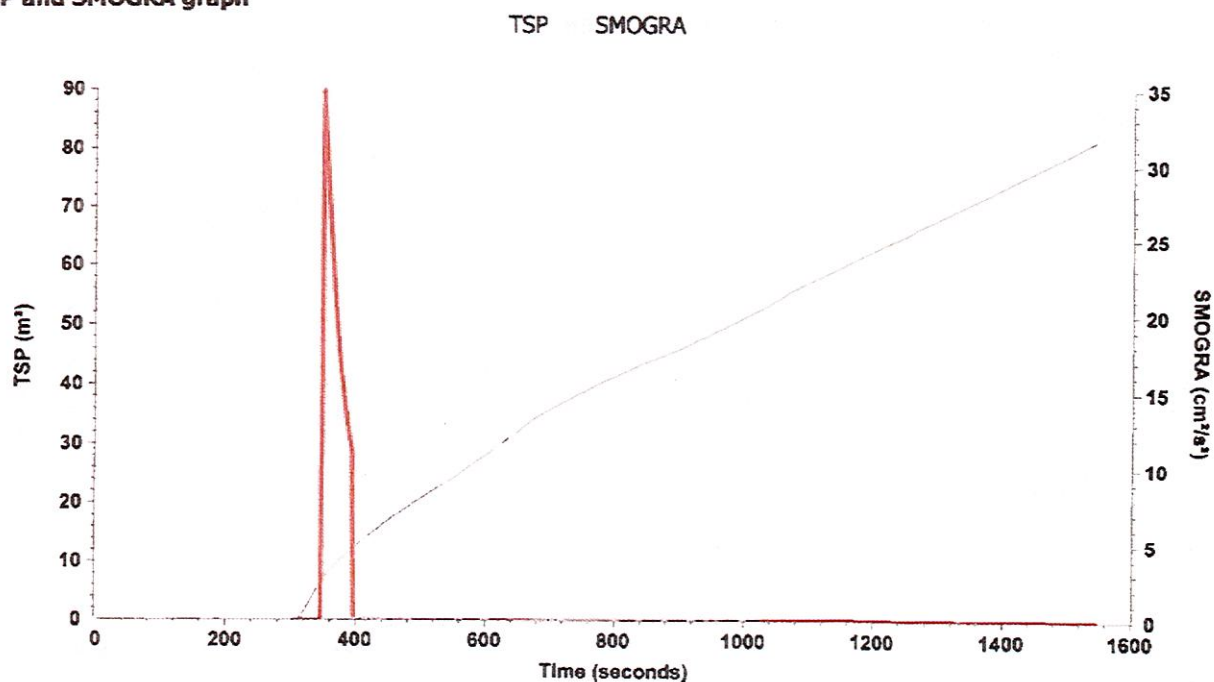
SBI Test Report

Laboratory name LFF
Operator João Rodrigues
Filename C:\SBICALC\DATA\17010003.RW1
Report identification 48/LFF/16/03

SPR and SPR(60) graph



TSP and SMOGRA graph



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