

INSTITUTO DE CIÊNCIA E INOVAÇÃO EM ENGENHARIA MECÂNICA E ENGENHARIA INDUSTRIAL

Laboratório de Fumo e Fogo

FIRE REACTION TESTS

SONAE – INDÚSTRIA DE REVESTIMENTOS, S.A.

TEST REPORT Nr LFF.2019.053.02



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0 Document Control and Identification

0.1 Document Identification

Project	---
Document Name	Test Report Nr LFF.2019.053.02
Document File Name	---

0.2 Version Control

Version	Edition	Revision	Date	Description	Approved by
1	1	0	2019-04-10	Original version	JMG

0.3 Author(s)

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Name	Initials
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0.6 Distribution list

Name	Initials	Entity
Laboratório de Fumo e Fogo	LFF	INEGI
---	---	Sonae – Indústria de Revestimentos, S.A.

0.7 Identification

Client: Sonae – Indústria de Revestimentos, S.A.

Address: Lugar do Espido – Via Norte
4470-177 Maia

Request: Tests according to standard EN 13823:2010 A1 November 2014

Request Reference: PE30190306

Request Date: 2019-03-22

Material Reference: Surforma HPL Unicolor (0.8 mm)

Reception Date: 2019-03-15

Test Date: 2019-03-29

Report Date: 2019-04-10



1 - Introduction

This report refers to exploratory fire reaction tests and the potential classification of a material with the reference "Surforma HPL Unicolor (0.8 mm)".

2 - Methodology

Test	Test procedure
Reaction to fire tests for building products. Building products exposed to the thermal attack by a single burning item.	EN 13823:2010 A1 November 2014

3 - Specimens

3.1 – Dimension and conditioning

The specimens were prepared by the client, having the following dimensions:

Reference	Length (mm)	Width (mm)	Thickness (mm)	Mass (g)
LFF.2019.053.01	1501	1000	0.8	2040
LFF.2019.053.02	1500	500	0.8	730

Prior to testing, the specimens were conditioned for a period of 335 hours at 23 ± 2 °C and 50 ± 5 % relative humidity, having met the constant mass criterion.

3.2 – Mounting of specimen

Specimens were tested free standing according (according to 5.2.2.a of the norm EN 13823).

4 - Results

Specimens	LFF.2019.053.01 and LFF.2019.053.02
FIGRA _{0,2 MJ} (W/s)	343.4
FIGRA _{0,4 MJ} (W/s)	324.9
THR _{600 s} (MJ)	3.4
LFS (m)	No
FIRE BEHAVIOUR	D
SMOGRA (m ² /s ²) (*)	108.2
TSP _{600s} (m ²) (*)	100.6
SMOKE PRODUCTION	s2
FLAMING DROPLETS/PARTICLES	No
FLAMING DROPLETS	d0

FIGRA: Fire growth rate THR: Total heat release LFS: Lateral flame spread (*): With smoke correction
SMOGRA: Smoke growth rate TSP: Total smoke production TNR: Threshold not reached


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.

5 – Limitations

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

This document is valid for 5 (five) years.

Porto, April 10, 2019



José Mesquita Guimarães
Laboratory Technical Director



ANNEX 1
Photographs

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Figure 1 – View of mounting.



Figure 2 – SBI test.

ANNEX 2
SBI Test Report

SBI Test Report

Laboratory name INEGI - LFF
 Operator Bruno Nogueira
 Filename C:\SBICALC\DATA\19030013.RWJ
 Report identification LFF.2019.053
 Product identification SURFORMA HPL UNICOLOR 0.8MM

Test	Pre-test conditions	Specimen conditioning
Standard used EN 13823:2010	Baseline duct temperature 296.75 K	Method Constant mass
Date of test 29/03/2019	Ambient temperature 295.22 K	Time interval 338 hours
Date of report 29/03/2019	Ambient pressure 100.846 kPa	Mass 1 2770 g
E' 17.2 MJ/m ²	Relative humidity 47%	Mass 2 2770 g
		Temperature 23°C
		RH 50%
Apparatus specifications	Baseline conditions	
kt 0.823	Baseline ambient oxygen 20.659%	
kp 1.08	Baseline oxygen 20.945%	
Duct diameter 0.315 m	Baseline carbon dioxide 0.0866%	
O2 calibration delay time 11 s	Baseline smoke 99.97%	
CO2 calibration delay time 13 s		

Specimen information

Thickness 0.8 mm	Mounting method S.2.2a) in EN 13823-2002
Density 3077 kg/m ³	Joints none
Surface mass/area 2.46 kg/m ²	Fixed to substrate? No
Specimen number 1	Fixing method N/A
Date of arrival 15/03/2019	Substrate none
	Manufacturer SONAE INDÚSTRIA DE REVESTIMENTOS SA
	Sponsor SONAE INDÚSTRIA DE REVESTIMENTOS SA

Test validity criteria

Test drifts	Initial	Final	Change	Burner details
Oxygen	20.945%	20.876%	0.069%	Burner HRR 27.307 kW
CO2	0.087%	0.106%	0.020%	Burner HRR std. dev. 0.616 kW
Smoke	99.97%	99.26%	0.007	Burner CO2/O2 ratio 0.759
				Burner SPR 0.027 m ³ /s
				Burner SPR std. dev. 0.004 m ³ /s
				Burner response time 9 s
				Other checks
				Minimum duct flow 0.478 m ³ /s
				Maximum duct flow 0.553 m ³ /s
				No T/C failure

Exposure time 1254 s

Synchronisation details

Duct temp. dropped by 2.5 K from baseline of 321.25 K at 303 s
 Oxygen rose by 0.05% from baseline of 20.636% at 300 s
 CO2 dropped by 0.02% from baseline of 0.334% at 300 s

Classification results

FIGRA(0.2) 343.4 W/s at 348 s
 FIGRA(0.4) 324.9 W/s at 354 s
 THR(600) 3.4 MJ
 SMOGRA 108.2 m²/s² at 357 s
 TSP(600) 100.6 m²

Classification observations

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

Potential classification

Class D
 Smoke production s2
 Flaming droplets/particles d0

Recorded events

Surface flashes? No; Failing 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

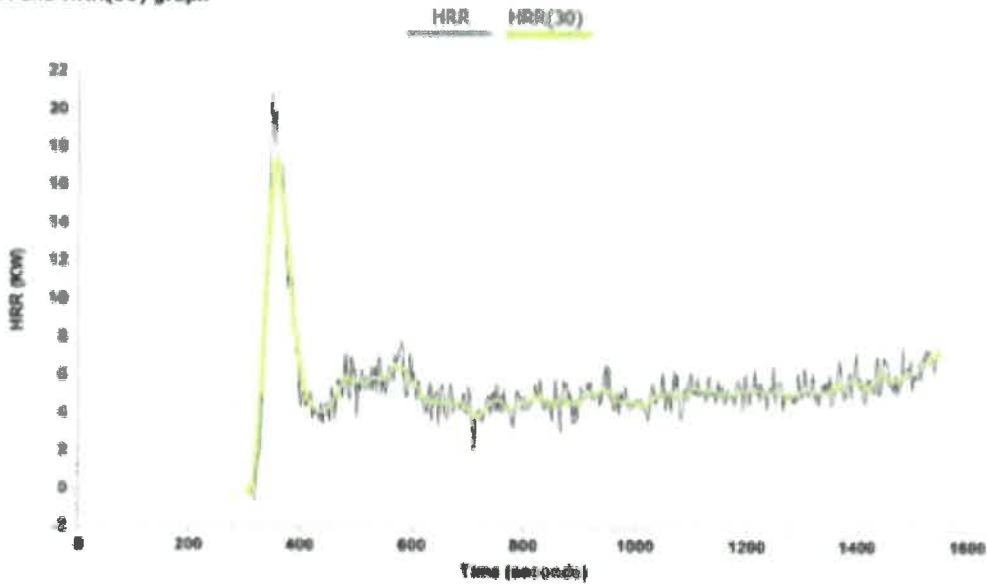
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The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

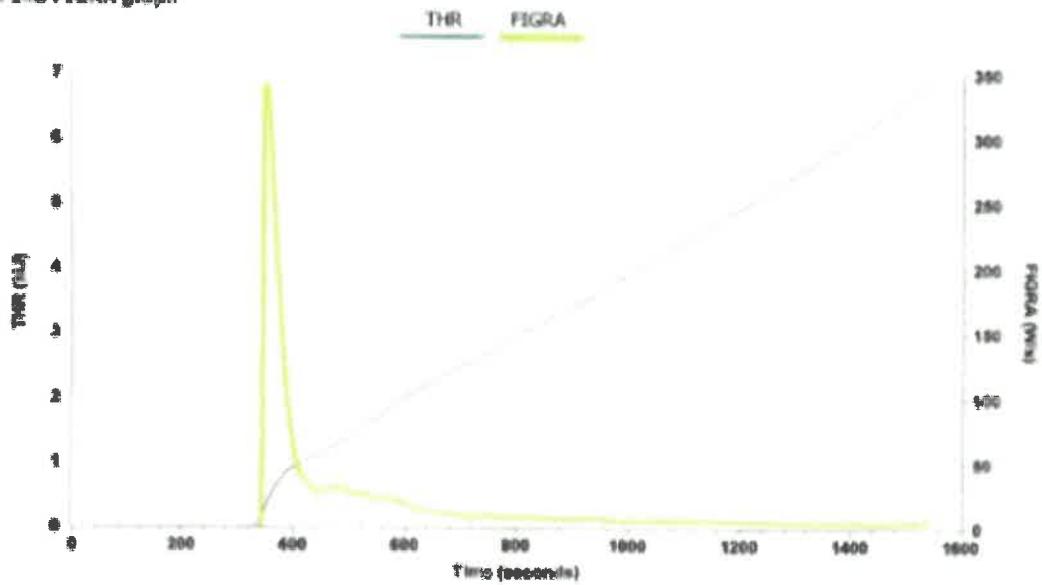
SBI Test Report

Laboratory name: INEGI - LFF
Operator: Bruno Nogueira
Filename: C:\SBI\CALC\DATA\19030013.RW1
Report identification: LFF.2019.053
Product identification: SURFORMA HPL UNICOLOR 0 6444

HRR and HRR(30) graph



THR and FIGRA graph

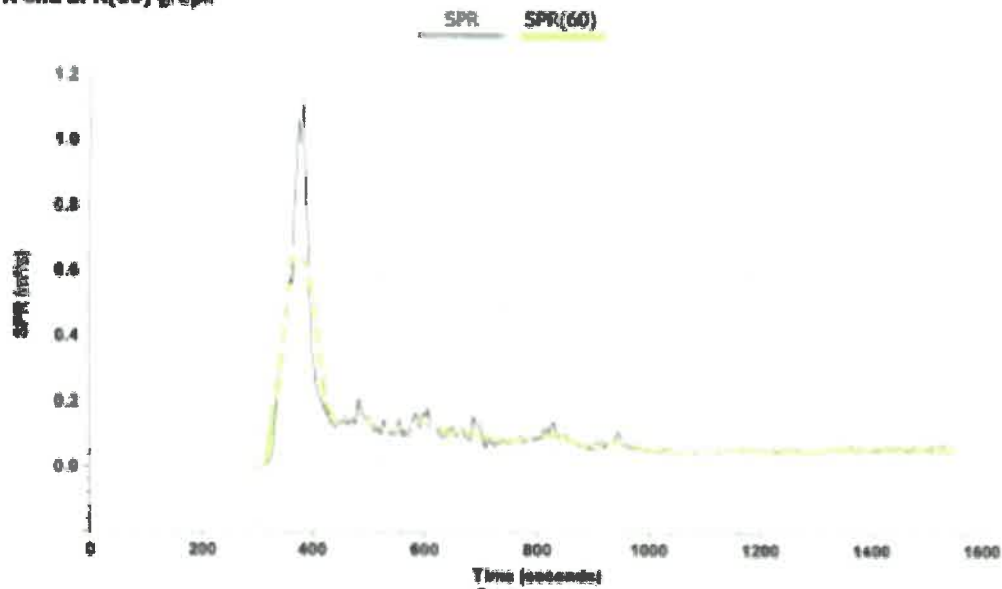


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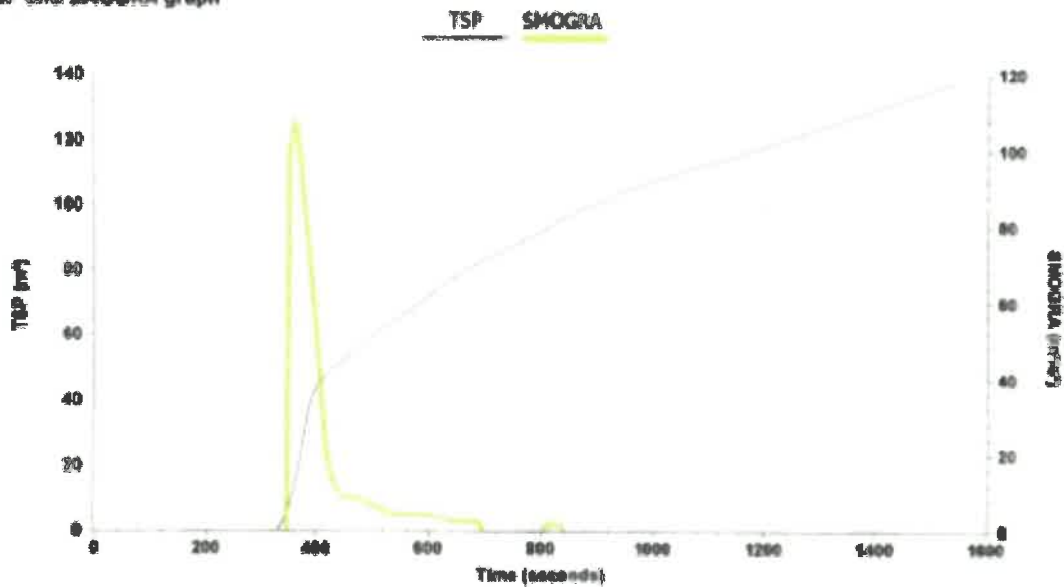
SBI Test Report

Laboratory name: INEGI - LFF
Operator: Bruno Nogueira
Filename: C:\SBICALC\DATA\19030013.RW1
Report Identification: LFF.2019.053
Product Identification: SURFORMA HPL UNICOLOR 0.8MM

SPR and SPR(60) graph



TSP and SMOGRA graph






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