

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.2019.045.02



Blank page

A

0 Document Control and Identification

0.1 Document Identification

Project	---
Document Name	Test Report Nr LFF.2019.045.02
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)

Name	Initials
Anabela Martins – Laboratory Technician	AM

0.4 Reviser(s)

Name	Initials
José Mesquita Guimarães – Technical Director of the Laboratory	JMG

0.5 Laboratory Technician(s)

Name	Initials
Bruno Nogueira – Laboratory Technician	BN

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 Post forming (0.8 mm)

Reception Date: 2019-03-15

Test Date: 2019-03-25

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 Post forming (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.2019.045.01	1500	1001	0.8	1260
LFF.2019.045.02	1500	501	0.8	610

Prior to testing, the specimens were conditioned for a period of 240 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.2019.045.01 and LFF.2019.045.02
FIGRA _{0,2 MJ} (W/s)	2497.2
FIGRA _{0,4 MJ} (W/s)	2497.2
THR _{600 s} (MJ)	11.2
LFS (m)	No
FIRE BEHAVIOUR	E
SMOGRA (m ² /s ²) (*)	26.7
TSP _{600s} (m ²) (*)	25.5
SMOKE PRODUCTION	s1
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



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:\SBI\CALC\DATA\19030008.RW1
 Report identification LFF.2019.045
 Product identification SURFORMA, HPL Post forming 0.8mm

Test	Pre-test conditions	Specimen conditioning
Standard used EN 13823:2010	Baseline duct temperature 294.46 K	Method Constant mass
Date of test 25/03/2019	Ambient temperature 294.53 K	Time interval 240 hours
Date of report 25/03/2019	Ambient pressure 100.774 kPa	Mass 1 1870 g
E' 17.2 MJ/m ²	Relative humidity 47%	Mass 2 1870 g
		Temperature 23°C
		RH 50%
Apparatus specifications	Baseline conditions	
It 0.823	Baseline ambient oxygen 20.702%	
Ip 1.08	Baseline oxygen 20.951%	
Duct diameter 0.315 m	Baseline carbon dioxide 0.0908%	
O2 calibration delay time 11 s	Baseline smoke 99.99%	
CO2 calibration delay time 13 s		

Specimen information		Mounting method	
Thickness 0.8 mm		5.2.2a) in EN 13823:2002	
Density		Joints	none
Surface mass/area		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				Burner details	
Test drifts				Burner HRR	27.196 kW
	Initial	Final	Change	Burner HRR std. dev.	0.720 kW
Oxygen	20.951%	20.921%	0.030%	Burner CO2/O2 ratio	0.417
CO2	0.091%	0.098%	0.007%	Burner SPR	0.026 m ³ /s
Smoke	99.99%	99.01%	0.010	Burner SPR std. dev.	0.004 m ³ /s
Exposure time	1254 s			Burner response time	12 s
Synchronization details				Other checks	
Duct temp. dropped by 2.5 K from baseline of 319.60 K at 303 s				Minimum duct flow	0.359 m ³ /s
Oxygen rose by 0.05% from baseline of 20.646% at 300 s				Maximum duct flow	0.555 m ³ /s
CO2 dropped by 0.02% from baseline of 0.340% at 300 s				No T/C failure	

Classification results	Classification observations	Potential classification
FIGRA(0.2) 2497.2 W/s at 363 s	LFS to edge? No	Class f
FIGRA(0.4) 2497.2 W/s at 363 s	FDP flaming <= 10s? No	Smoke production s1
THR(600) 11.7 MJ	FDP flaming > 10s? No	Flaming droplet/particles d0
SMOGRA 26.7 m ² /s ² at 363 s		
TSP(600) 25.5 m ²		

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.

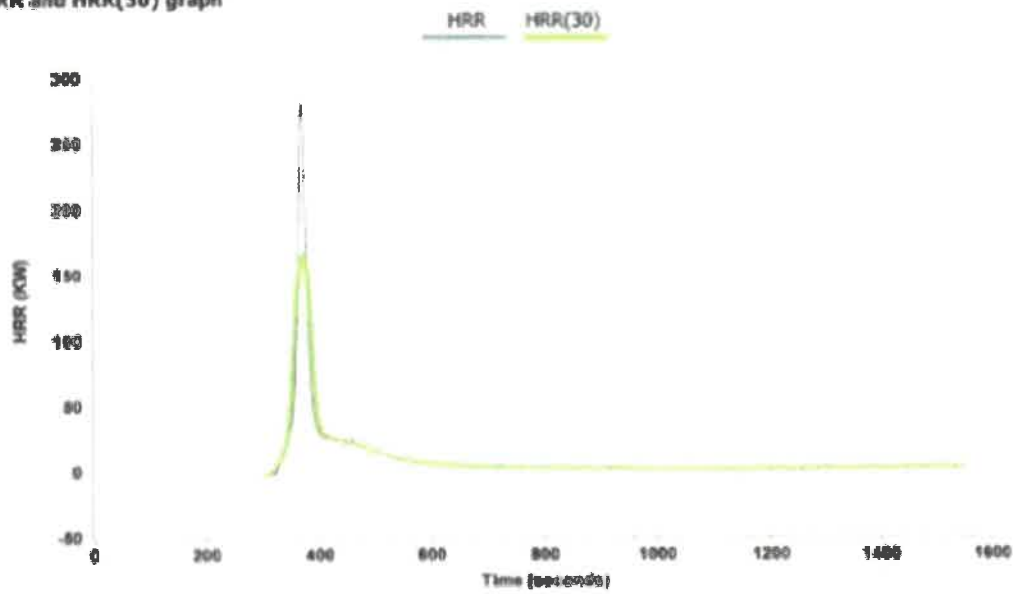
Report produced with the Fire Testing Technology SBIcalc software

page 7

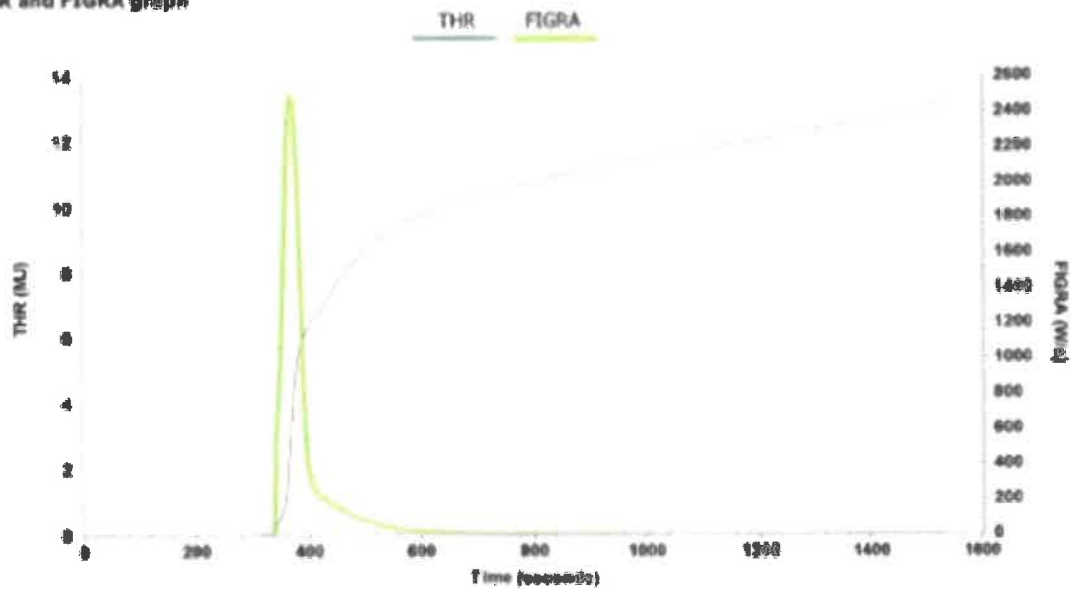
SBI Test Report

Laboratory name: INEGI - LFF
Operator: Bruno Nogueira
Filename: C:\SBI\CALC\DATA\19030008.RWI
Report identification: LFF.2019.045
Product identification: SURFORMA, HPL Post forming 0.8mm

HRR and HRR(30) graph



THR and FIGRA graph

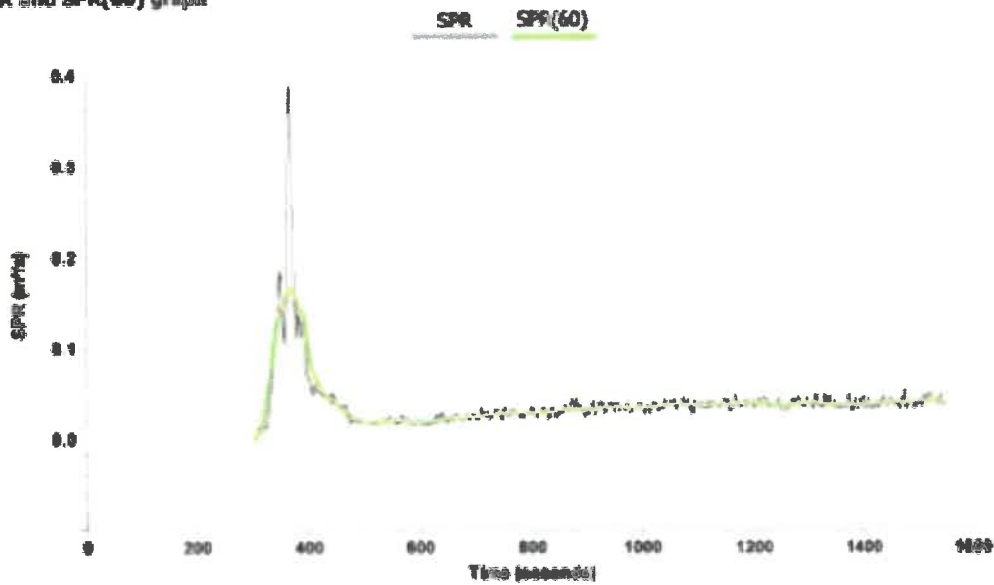


The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

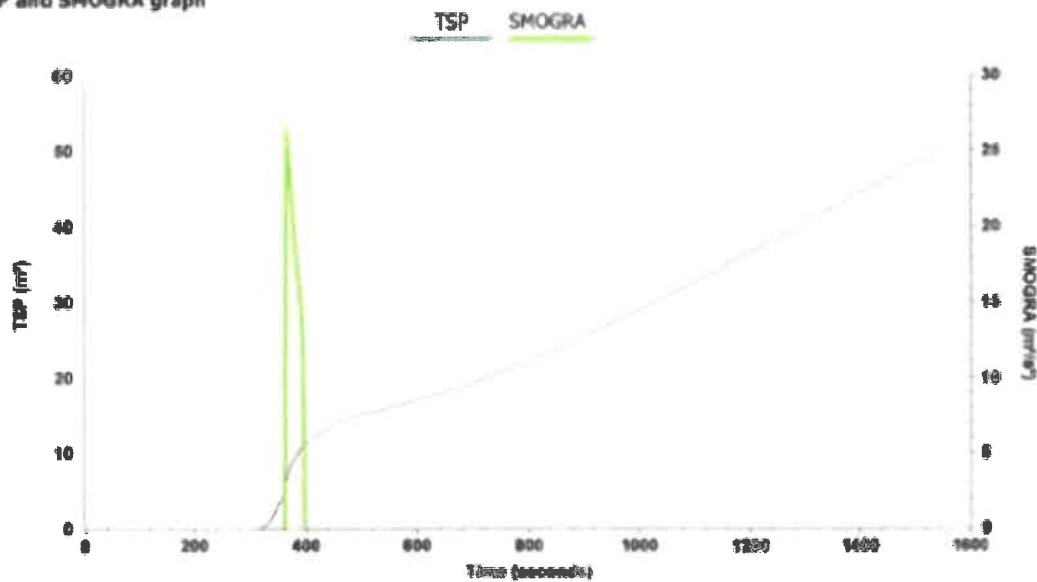
SBI Test Report

Laboratory name INEGI - LFF
Operator Bruno Nogueira
Filename C:\SBICALC\DATA\19030006.RW1
Report identification LFF.2019.045
Product identification SURFORMA, HPL Post forming 0.8mm

SPR and SPR(60) graph



TSP and SMOGRA graph






The test reports 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.

Blank page



INEGI
Campus da FEUP
Rua Dr. Roberto Frias, 400
4200-465 Porto
PORTUGAL

 inegi@inegi.up.pt
 +351 229578710
 +351 229537352



driving science & innovation since 1966

www.inegi.up.pt

U. PORTO