

Bellaterra: 10th March, 2010
File: 10/102164-2802 Parte 1 English Version
Petitioner's reference: **TEXSA**
C/Ferro, 7
Pol. Ind. Can Pelegrí
08755 Castellbisbal
Barcelona



TEST REPORT

Date at which the sample was received: 28-11-2010

1.- OBJECT OF THE TEST

Fire tests of construction products in compliance with the following standard:

- UNE-EN-ISO 11925-2:2002: Flammability of construction products when these are exposed to the direct action of the flame. Part 2: Test performed with a single flame source.
- UNE-EN 13823:2002: "Construction products excluding floor coating, exposed to thermal attack caused by a single burning object."

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This document has 23 pages, of which 13 are annexes.

2.- PRODUCT CHARACTERISTICS

Synthetic plate have been received with the following instructions according to technical specifications provided by the petitioner:

Synthetic soundproof plate with polymeric base.

Commercial product reference: TECSOUND SY 35

Tecsound SY 35, with 1.7 mm in thickness, 2 Kg/m³ in density, yellow coloured and viscous appearance.

3.- MAINTENANCE SPECIFICATIONS

Not applicable.

4.- DESCRIPTION OF THE FINAL CONDITIONS FOR USE

Acoustic insulation plate

5.- CONDITIONING

The product conditioning was conducted in compliance with Standard UNE-EN 13238:2002: "Fire Reaction Tests for construction materials. Conditioning procedures and general rules for the selection of substrates."

The samples were stored in a conditioning chamber at 23 °C +2 °C, and at 50% +5% relative humidity, until a constant weight was reached.

6.- TESTS

6.1.- Small Burner Test in compliance with Standard UNE-EN-ISO 11925-2:2002

Date at which test was performed: Start: 29-11-2010
End: 30-11-2010

During the tests, the environmental conditions of the laboratory were maintained at a temperature of $23 \pm 5^{\circ}\text{C}$, and relative humidity de $50 \pm 20\%$.

6.1.1. - Method specifications according to final conditions for use:

6.1.1.a)- Flame exposure conditions

A flame was applied above the surface of the sample, in accordance with the specifications contained in paragraph 7.3.3.1. of the test standard.

6.1.1.b)- Conditions for flame application: 30 seconds

6.1.1.1.- General procedure based on paragraph 7.

Air velocity in compliance with paragraph 4.2 of the testing standard: 0,7 m/s

SAMPLES	Application of the flame on the surface					
	Lengthwise			Crosswise		
	I	II	III	I	II	III
Duration of inflammation (in s)	36	33	39	32	27	24
Time needed to reach 150 mm (in s)	-	-	-	-	-	-
Ignition of the filter paper (yes/no)	NO	NO	NO	NO	NO	NO

(-) no inflammation has occurred during the test.

Remarks

During the test, no product inflammation was observed, or any fall of material onto the filter paper.

Uncertainty of measurement

Not applied, because there isn't measurement.

6.2.-SBI Test based on Standard UNE-EN 13823:2002

Date at which test was performed: Start: 29-11-2010
End : 30-11-2010

During the tests, the environmental conditions of the laboratory were maintained at a temperature of $20 \pm 10^{\circ}\text{C}$.

6.2.1. – General principles of the test

This is to determine the fire reaction behaviour of the construction products when these are exposed to the thermal attack of a single burning object.

The product is tested while installed on a sample support positioned at an angle. Each test tube consists of two wings: one 1,500 mm x 495 mm-short wing, and one 1,500 mm x 1,000 mm-long wing, by the thickness of the product.

The assembly and installation of the product on the support must be representative of the final use condition of such product.

A minimum of three test tubes per test are tested for each condition of use. The product is exposed to the flames for approximately 21 minutes. The relevant measurements are continuously recorded every three seconds.

The test tube is exposed to the flame of a propane burner with a nominal power of 30.7 kW. The burner is located on the base of the angle formed by the corner, at a distance of 40 mm from the surface of the product.

6.2.2. – Expression of the results

The test makes it possible to assess how much heat and smoke are released by the products subject to the thermal attack. These measurements are the basis to determine the following indexes:

6.2.2.1.-

FIGRA_{0.2MJ} and FIGRA_{0.4MJ} (in W/s)

These are defined as the maximum value of the quotient $\text{HRR}_{\text{av}}(t) / (t-300)$, multiplied by 1,000. The quotient is only calculated for that part of the exposure time during which the levels of the thresholds for HRR_{av} and THR were exceeded.

If one of the two threshold values of a FIGRA index is not topped during the period of exposure, this FIGRA index equals zero. Two different TRH threshold values are used, which result in FIGRA_{0.2MJ} and FIGRA_{0.4MJ}.

THR600 (in MJ)

This is the total heat released by the sample during the first 600 s (10 minutes) from the beginning of the exposure to the main burner.

HRR (in kW):

This is the velocity of the heat released.

6.2.2.2.-

SMOGRA (in m²/sec)

This is defined as the maximum value of the quotient $SPR_{av}(t) / (t-300)$, multiplied by 10,000. The quotient is only calculated for the part of the time of exposure during which the levels of the thresholds for SPR_{av} and TSP were exceeded.

If one or the two threshold values are not exceeded during the period of exposure, the SMOGRA value equals zero.

TSP600 (in m²)

This is the total amount of smoke released by the sample during the first 600 s (10 minutes) from the beginning of the exposure to the main burner.

SPR (in m²/sec):

This is the smoke production velocity.

6.2.3.- Assembly Specifications

Each test set consists of two items:

1 part measuring 1,500 x 495 mm, which is representative of the short wing, and
1 part measuring 1,500 x 1,000 mm, representative of the long wing, in accordance with the specifications contained in paragraph 5.1.1.

Fixing system:

- 1- Plates were fixed with screws to Calcium Silicate substrate with 870 ± 50 Kg/m³ in density, 11 ± 2 mm in thickness, an A2 euroclass, according to standard UNE EN 13238:2002.

Assembling was carried out with a vertical joint in the long wing at a distance of 200 mm from the corner line, according to point 5.2.2.e) to test standard.

6.2.4.- Test results

6.2.4.1-Sample nº1

Environmental conditions at the beginning of the test:

Temperature: **13 °C**

HR: **61 %**

Pressure: **99298 Pa**

Level of exposure of the burner (kW): **31.92**

INDEXES

FIGRA_{0.2 MJ} (W/s)	105.15
FIGRA_{0.4 MJ} (W/s)	105.15
LFS	< to edge
THR_{600s} (MJ)	6.17
SMOGRA (m²/s²)	13.60
TSP_{600s} (m²)	84.80
Release of inflamed material in 600 s	NO

Conditions at the end of the test:

Temperature: **14 °C**

HR: **60 %**

Pressure: **99472 Pa**

Light transmission (%): **99.97 %**

O₂ concentration (%): **20.94 %**

CO₂ concentration (%): **0.00 %**

6.2.4.2.-Sample nº 2

Environmental conditions at the beginning of the test:

Temperature: **13 °C**

HR: **59 %**

Pressure: **99115 Pa**

Level of exposure of the burner (kW): **30.81**

INDEXES

FIGRA_{0.2 MJ} (W/s)	76.43
FIGRA_{0.4 MJ} (W/s)	61.85
LFS	< to edge
THR_{600s} (MJ)	5.54
SMOGRA (m²/s²)	8.47
TSP_{600s} (m²)	74.90
Release of inflamed material in 600 s	NO

Conditions at the end of the test:

Temperature: **13 °C**

HR: **57 %**

Pressure: **98972 Pa**

Light transmission (%): **98.94 %**

O₂ concentration (%): **20.93 %**

CO₂ concentration (%): **0.01 %**

6.2.4.3.-Sample nº3

Environmental conditions at the beginning of the test:

Temperature: **14 °C**

HR: **56 %**

Pressure: **99955 Pa**

Level of exposure of the burner (kW): **30.76**

INDEXES

FIGRA_{0.2 MJ} (W/s)	120.10
FIGRA_{0.4 MJ} (W/s)	120.10
LFS	< to edge
THR_{600s} (MJ)	6.40
SMOGRA (m²/s²)	15.61
TSP_{600s} (m²)	93.24
Released of inflamed material in 600 s	NO

Conditions at the end of the test:

Temperature: **13 °C**

HR: **56 %**

Pressure: **99874 Pa**

Light transmission (%): **99.72 %**

O₂ concentration (%): **20.95 %**

CO₂ concentration (%): **0.01 %**

6.2.5.- Visual observation

The observation of released material or of inflamed particles during the first 10 minutes of the test lead to the attribution of the identification sub-index "d" to the material, so that:

d0: No release of inflamed material is observed.

d1: release of inflamed material with a < 10 s flame persistence.

d2: Release of inflamed material with a > 10 s flame persistence.

No propagation of the side flame over the long wing, or release of inflamed material is observed in any of the three tested test tubes.

6.2.6.- Uncertainty associated to the measurement equipment

Set of thermocouples of the extraction pipe	2°C
Pressure transmitter of the pipe	2 Pa
Smoke measuring device	5%
Ambient pressure measuring equipment	5%
Ambient humidity measuring device	5%
Ambient temperature measuring device	2°C

6.3.-Results

6.3.1.- UNE-EN ISO 11925-2:2002

	Application of the flame on the surface
Flame propagation	Fs < 150 mm in 60 seconds
Paper inflammation	NO

6.3.2.- UNE-EN 13823:2002

Samples	I	II	III	Mean Value
FIGRA_{0.2 MJ} (W/s)	105.15	76.43	120.10	100.56
FIGRA_{0.4 MJ} (W/s)	105.15	61.85	120.10	95.70
LFS	< to edge	< to edge	< to edge	< to edge
THR_{600s} (MJ)	6.17	5.54	6.40	6.04
SMOGRA (m²/s²)	13.60	8.47	15.61	12.56
TSP_{600s} (m²)	84.80	74.90	93.24	84.31
Release of inflamed material in 600 s	NO	NO	NO	NO

The test results correspond to the behaviour of test samples of a product under the testing conditions themselves. They do not intend to be the only evaluation criterion to assess the potential fire hazard involved in the use of the product.

The Euro class to which the tested product belongs is defined in Part 2 of the Classification Report.

Fire Controller
LGAI Technological Center S.A.

Chief Technician
LGAI Technological Center S.A.

The results refer exclusively to the samples tested at the time and under the conditions indicated.

The uncertainties expressed in this document pertain to the expanded uncertainty, which has been obtained by multiplying the typical measurement uncertainty by the coverage factor k=2 which, for a regular distribution, corresponds to a coverage probability of approximately 95%.

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In the event of litigation, the Spanish version will be valid

ANNEXES

7.- PHOTOGRAPHS

8.- CHARTS

7.- PHOTOGRAPHS



Photo n°1: Detail of the corner assembly, upper view.



Photo n°2: Detail of the vertical side edge of the long wing, some 500 mm from the bottom of the support.



Photo n°3: Detail of the corner and anchoring system.



PHOTO N°4: View of the product prior to starting the test.



PHOTO Nº5: Sample nº1 – Flame attack approx. 10 minutes after the start of the test.



PHOTO N°6: Sample nº1 – Product status upon completion of the test.



PHOTO N°7: Sample nº2 – Flame attack approx. 10 minutes after the start of the test.



PHOTO N°8: Sample nº2 – Product status upon completion of the test.



PHOTO N°9: Sample nº3 – Flame attack approx. 10 minutes after the start of the test.



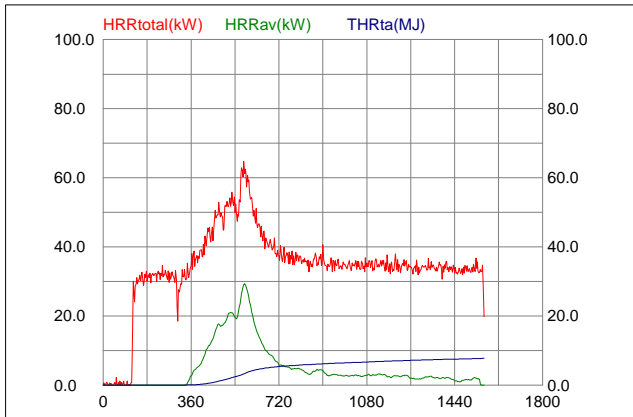
PHOTO N°10: Sample nº3 – Product status upon completion of the test.

8.- CHARTS

Sample nº1 – Ratios related to the release of heat and smoke.

Sample nº2 – Ratios related to the release of heat and smoke.

Sample nº3 – Ratios related to the release of heat and smoke.



NORMA: UNE-EN 13823:2002

Data del test: 30:11:10 10:13

Nom del fitxer: 2802mostra1

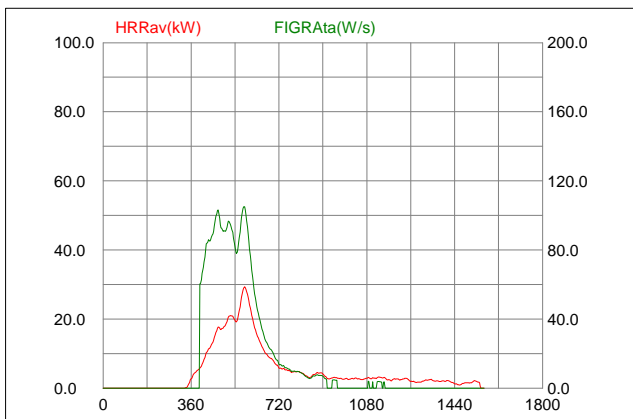
Descripció: -

Client: TEXSA

Material: TECSOUNS SY-35

Pes (kg/m²): -

Gruix: 1.7 mm

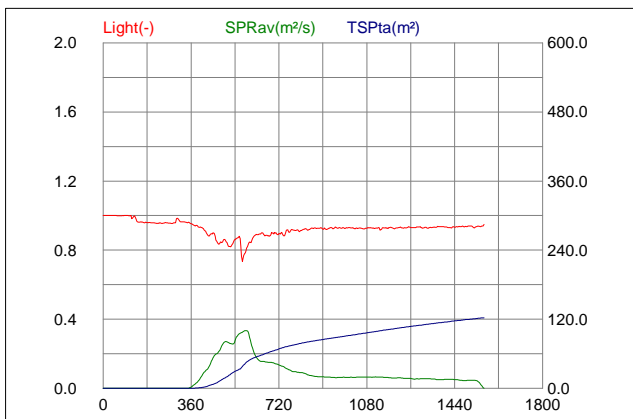


HRR av: 31.92 kW

THR 600s: 6.17 MJ

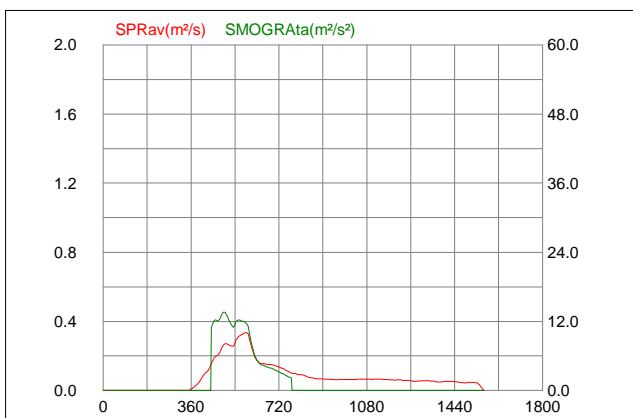
FIGRA 0,2MJ: 105.15 W/s

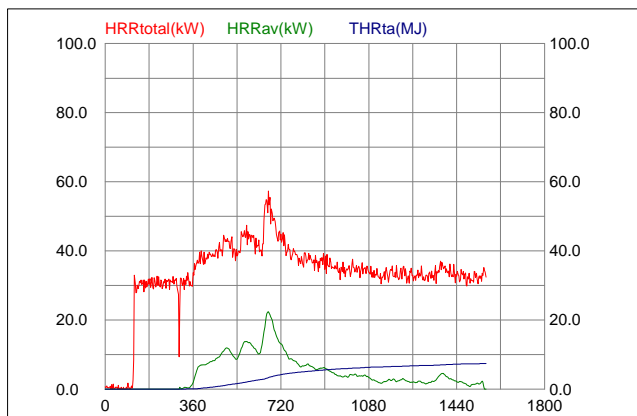
FIGRA 0,4MJ: 105.15 W/s



TSP 600s: 84.80 m²

SMOGRA: 13.60 m²/s²





NORMA: UNE-EN 13823:2002

Data del test: 30:11:10 11:26

Nom del fitxer: 2802mostra2

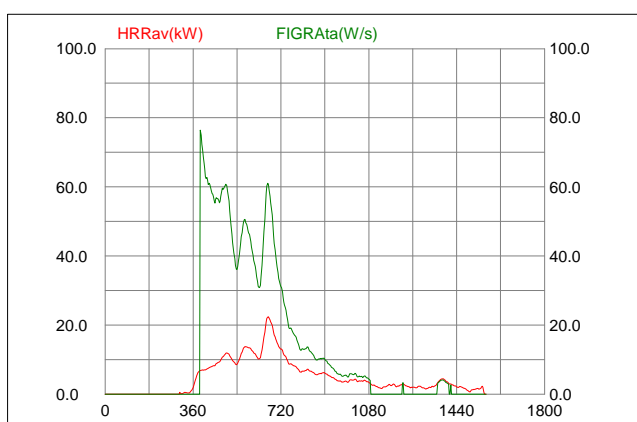
Descripció: -

Client: TEXSA

Material: TECSOUND SY-35

Pes (kg/m²): -

Gruix: 1.7 mm

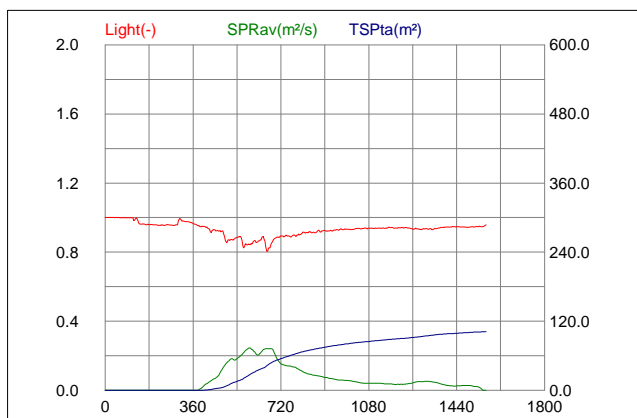


HRR av: 30.81 kW

THR 600s: 5.54 MJ

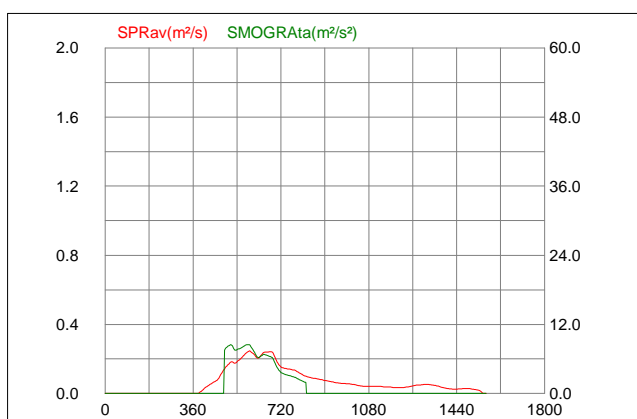
FIGRA 0,2MJ: 76.43 W/s

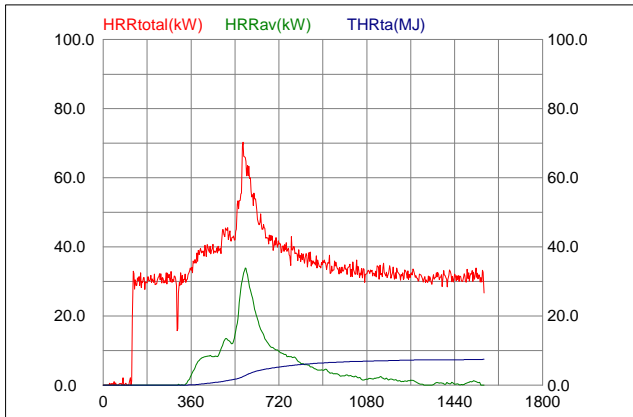
FIGRA 0,4MJ: 61.85 W/s



TSP 600s: 74.90 m²

SMOGRA: 8.47 m²/s²





NORMA: UNE-EN 13823:2002

Data del test: 30:11:10 12:18

Nom del fitxer: 2802mostra3

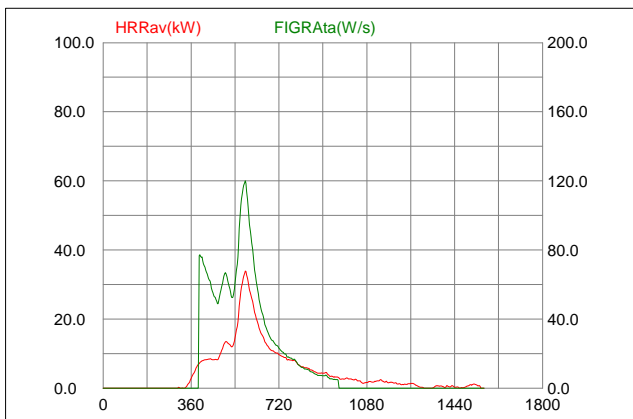
Descripció: -

Client: TEXSA

Material: TECSOUND SY-35

Pes (kg/m²): -

Gruix: 1.7 mm

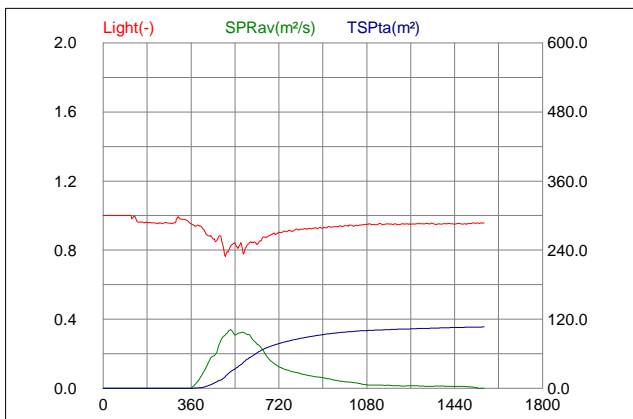


HRR av: 30.76 kW

THR 600s: 6.40 MJ

FIGRA 0,2MJ: 120.10 W/s

FIGRA 0,4MJ: 120.10 W/s



TSP 600s: 93.24 m²

SMOGRA: 15.61 m²/s²

