



*Laboratorium voor  
Aanwending der Brandstoffen en  
Warmteoverdracht*

St.-Pietersnieuwstraat 41, B - 9000 Gent  
Tel. (09) 264 32 88

Proefstation: Ottergemsesteenweg 711, B - 9000 Gent  
Tel. (09) 222 25 50 - Telefax (09) 220 20 61

***Beproeivingsverslag Nr : 9309 B***  
***Translation***

**Sponsor**

LINOPAN n.v.  
Ooigemstraat 16  
8710 WIELSBEKE  
BELGIUM

**Material**

WOOD CHIP BOARD 25 mm

**Trade Name**

LINOPAN F-R

**Name of the manufacturer**

LINOPAN n.v.  
Ooigemstraat 16  
8710 WIELSBEKE  
BELGIUM

**Nature of the tests**

Tests concerning the reaction to fire of this material according to the Royal decree of 7 July 1994 amended by Royal decree of 29 December 1997 and based on BS 476 - Part 7 (1987).

**This report consists of**

- 5 pages
- 2 annexes including
- 1 annex with photograph



## 1. THE REACTION TO FIRE

The tests concerning the reaction to fire should determine the behaviour in a fire of the material concerning the contribution of this material to the development of a fire.

This behaviour is characterised starting from test results, only of a conventional nature, so that these test results do not have an "absolute value".

## 2. DESCRIPTION OF THE TEST METHOD

At the request of the sponsor, the test and the classification are carried out in accordance with "Annex 5: Reaction to fire of materials- of the Royal decree of 7 July 1994 defining the basic standards for prevention of fire and explosion to which new buildings shall fulfil - modified by Royal decree of 19 December 1997".

For this purpose the testmethod according to the British Standard "BS 476 - Part 7 - 1987 - Method for classification of the surface spread of flame of products" was used.

Description of the test and classification method: annex 1.

### 3. TEST SPECIMEN

The firm Linopan n.v., Ooigemstraat 16, 8710 Wielsbeke, Belgium, provided the laboratory with a series of 7 samples of 0,265 m x 0,900 m of a material, in order to determine the reaction to fire characteristics of the material.

Reception of the specimen : 21-05-99

Sampling : By the sponsor

Trade name : LINOPAN F-R

Description of the material :

*This description is based on information given by the sponsor. All values are nominal, except for measured values, which are identified as MV. The measured values are mentioned in addition to the nominal values only if they differ more than 5 % from these nominal values.*

The tested material is a wood chip board with a thickness of 25 mm (MV: 25,1 mm) a volumic mass of 600 to 700 kg/m<sup>3</sup> (MV: 627 kg/m<sup>3</sup>).

### 4. CONDITIONING

Before testing, the samples have been conditioned according to the specifications of the standard mentioned above.

## 5. RESULTS

The tests have been carried out on: 03-06-1999.

### a) Observations:

Test Nr.	1	2	3	4	5	6
Spread of flame after 1'30" (mm)	40	40	40	40	30	30
Spread of flame after 10' (mm)	40	40	40	40	30	30
Extinction (s)	61	60	60	60	60	60

### b) Results:

$V_m$  after 1'30" : 40 mm

$V_l$  after 1'30" : 40 mm

$V_m$  after 10' : 40 mm

$V_l$  after 10' : 40 mm

### c) Photo of the test specimen before and after the test: annex 2

## 6. CONCLUSION

*The test results relate only to the behaviour of the 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.*

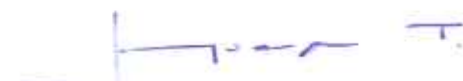
*The test results are only valid for the specimen of the product as they have been tested. Small differences in the composition or thickness of the specimen may significantly affect the performance during the test and may therefore invalidate the test results.*

*In order to obtain test results which are representative for the product which is supplied or used, the conformity between the test specimen and the product should be assured. This is the role of the manufacturer and/or the supplier.*

The wood chip board 'LINOPAN F-R', as described in § 3 and under the conditions of the test, is **classified in class A1** according to the Royal decree of 7 July 1994 – Annex 5: reaction to fire of materials – modified by Royal decree of 19 December 1997, and is **classified in class 1**, according to the British Standard BS 476.- Part 7 – 1987.

Ghent, 03 June 1999

Translation made, 03 June 1999



Ing T. JACQUEMYN



Prof. dr. P. VANDEVELDE  
Director

BS 476 part 7 En nr5.doc

**CLASSIFICATION OF MATERIALS IN ACCORDANCE WITH "ANNEX 5: REACTION TO FIRE OF MATERIALS – OF THE ROYAL DECREE OF 7 JULY 1994 DEFINING THE BASIC STANDARDS FOR PREVENTION OF FIRE AND EXPLOSION TO WHICH NEW BUILDINGS SHALL FULFIL.**

The materials are classified in 5 classes: A0, A1, A2, A3 and A4 according to the below mentioned test methods.

- A0 : materials considered as "non-combustible" following method Nr. 1.
- A1 : materials of category 1 following method Nr. 2 or of class 1 following method Nr. 3.
- A2 : materials of category 2 following method Nr. 2 or of class 2 following method Nr. 3.
- A3 : materials of category 3 following method Nr. 2 or of class 3 following method Nr. 3.
- A4 : all other materials.

This classification is based on the following test methods:

1. Method Nr 1

This method is described in the standard ISO 1182: Non-combustibility of building materials.

5 cylindrical specimens, diameter 45 mm, height 50 mm vertically placed in the specimenholder, and placed in the furnace at 750°C. Thermocouples shall be provided for measuring the furnace temperature, the temperature in the centre of the specimen and the temperature on the surface of the specimen. Duration of the test : 30 min.

A0 classification is obtained if the average temperature rise is not more than 50 °C, the average weight loss is not more than 50% and the average duration of sustained flaming should not exceed 20 sec.

## 2. Method Nr 2:

This method is described in the French Standard NF P 92-501.

This test consists of subjecting samples of 0,30 m x 0,40 m to a heat source in well defined conditions in order to ignite if possible the decomposition gases produced in this way.

One notes the time of ignition, the flame length if any, and the changes in the thermal equilibrium of the box.

For each material, four samples are submitted to the test. The criterions used to provide a classification for the materials are based on the following indices:

- ignition criterion : i
- development criterion : s
- maximum flame length criterion : h
- combustibility criterion : c

This method permits a classification of materials in 4 categories.

Category	$s = 0$	$s < 0,20$	$0,20 \leq s < 1$	$1 \leq s < 5$
I	$h = 0$ $c < 1$ $i = 0$			
II		$h < 1$ $c < 1$ $i$ any	$h < 1$ $c < 1$ $i < 1$	
III			$h < 1,5$ $c < 1$ $i$ any	$h < 2,5$ $c < 2,5$ $i < 2$
IV	Materials who do not belong in I, II or III			

Materials who melt or in which holes appear before inflammation must be tested additionally according to the French standard NF P 92-504.

### 3. Method Nr 3:

This method is described in the British Standard BS 476 - part 7.

A sample of 0,265 m x 0,900 m is exposed to the radiation heat of a radiant panel in such a way that the intensity of the radiation, incident on the surface of the sample, varies in a given direction following a prescribed law. At the same time, a gas burner flame is placed near the edge with the highest temperature. Six tests are carried out. The times needed by the flame to reach certain distances are measured.

This method provides a classification of the materials with four classes:

In order to be classified in a certain class, the flame spread for each of the six tests ( $V_m$ ) and for each of the six tests except one ( $V_i$ ) must not exceed the limits mentioned in the following table.

Class	Flame spread after 1,5 min.		Flame spread after 10 min.	
	Limit $V_m$ (mm)	Limit $V_i$ (mm)	Limit $V_m$ (mm)	Limit $V_i$ (mm)
Class 1	190	165	190	165
Class 2	240	215	500	455
Class 3	290	265	785	710
Class 4	Materials who do not belong to above mentioned 3 classes			

Photograph of the test specimen before and after the test

