

# CLASSIFICATION REPORT

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TEST SPECIMEN	Type: TRANSPARENT FINISHING PROCESS ON FIRE-RETARDANT MDF Reference: "RANGE FIRE-RETARDANT PROCESS 001"	
CONCERNING TO:	CLASSIFICATION OF THE BEHAVIOUR IN CASE OF FIRE OF THE CONSTRUCTION PRODUCTS AND THE BUILDING ELEMENTS. CLASSIFICATION USING AS A STARTING POINT THE DETAILS OBTAINED AT THE FIRE RESISTANCE TESTS. ACCORDING TO STANDARD UNE-EN 13501 - 1:07	
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## 1. INTRODUCTION

This classification report describes the classification allocated to the product described on section 2, according to the procedures stated in standard UNE-EN 13501-1:2007 "Classification of performance in case of fire of the construction products and the building elements. Part 1: Classification using as a starting point the details obtained at the fire reaction tests".

## 2. DETAILS OF THE CLASSIFIED PRODUCT

### 2.1. Description and identification of the tested item. Inspection before the test

Specimens corresponding to fire-retardant MDF board with fibres of average density (B-s2-d0 according UNE EN 13501-1:02), 19 mm thick, varnished by the company with a spray gun, with a fire-retardant process based on polyurethane nature products on a solvent, in a process which consists of one layer of background product with an approximate application grammage of 80 g/m<sup>2</sup> always with the same background product (BACKGROUND 110040) and only one finishing layer of 80 g/m<sup>2</sup>, which may be different regarding the formulation of the superficial brightness. The drying/curing period between layers is 4 hours.

The set shows an approximate density of 0,77 g/cm<sup>3</sup> and an approximate superficial mass of 14,58 kg/m<sup>2</sup>

The direct applicability of the fire reaction classification, according to classification standard UNE EN 13501-1, may be valid for all the products within the same family, if as family we mean the range of products within defined limits of variability of their parameters, for which it can be shown that the fire reaction classification does not change.

Therefore, we intend to classify a range of products where a selection is made based on the different parameters provided for by the range. According to information provided by the customer, the range to be tested is made up of different visual features regarding the superficial brightness degree (bright, satin or matt), all with the same production system and materials.

The tests, as well as the specimen selection are carried out taking as reference the different protocols defined by Sector Group SH02 (European body which coordinates all the aspects related to CE marking regarding fire performance), and more specifically taking as reference document NB-CDP/SH02/06/029 "Classification following extended application: All specifications covering reaction to fire performance").

Likewise, CEN/TS 15117: 05 "Guidance on direct and extended application" is used as reference document.



The recommendations in document prEN 15725:08 "Extended applications reports on the fire performance of construction products and building elements" are also considered as reference document, in the specimen selection for the range or extension tests.

Based on the recommendations above mentioned it was decided, within the test plan, to carry out the following specimen selection criteria (taking into account the range between the maximum superficial brightness degree of 95% at an angle of 60°, brightness degree, and the minimum degree of 20% at an angle of 60°, matt degree):

- ❖ For Test SBI: a specimen of the highest degree of brightness system (95% at an angle of 60°) and one of the lowest degree of brightness system (20% at an angle of 60°) should be tested. Once the worst stage of superficial brightness degree has been established, a full test of that superficial brightness degree should be carried out.
- ❖ Small burner test: Full test of the degree of highest superficial brightness and full test of the degree of lowest superficial brightness.

The classification shall be valid for all the products in the range as long as in the selected products the performance obtained can be reached by all the other products in the same classification.

- The commercial references of the selected varnish systems according to the customer are:

↳ "FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE RETARDANT PROCESS 001 FINISHING 120141 BR (95% BRIGHT AT 60° - BRIGHT)"  
Ref.: 0907051-01

↳ "FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE RETARDANT PROCESS 001 FINISHING 120140 MT (20 % BRIGHT AT 60° - MATT)"  
Ref.: 0907051-01

The range of products, according to the information provided by the customer, is referenced as:

↳ "RANGE FIRE-RETARDANT PROCESS 001"

## **2.2. Range of products**

The classification of fire performance, according to classification standard UNE EN 13501-1, may be valid for all the products within the same family, if as family we mean the range of products within defined limits of variability of their parameters, in this case the parameter



degree of superficial brightness of the finishing, for which it can be shown that the fire reaction classification does not change.

Therefore, the range of products included in the applicability of the results of the fire reaction classification, according to information provided by the customer, is the one described for fire-retardant systems based on polyurethane nature products on a solvent, in processes which consist of one layer of 80 g/m<sup>2</sup> background of 110040 BACKGROUND and only one finishing layer of 80 g/m<sup>2</sup> which may be different regarding the formulation of superficial brightness, and which includes the range from BRIGHT (95% bright at 60°) and ref: 120141 BR) to MATT (20 % bright at 60° and ref: 120140 MT).

### 3. TEST REPORTS SUPPORTING THE CLASSIFICATION

Laboratory	Company/customer	Reference of the test report	Tests method
AIDIMA	VALENCIANA DE RECUBRIMIENTOS, S.A.	0907051-01 SBI + PQ and 0907051-02 SBI + PQ	UNE-EN 13823:02
AIDIMA	VALENCIANA DE RECUBRIMIENTOS, S.A.	0907051-01 SBI + PQ and 0907051-02 SBI + PQ	UNE EN ISO 11925-2:02



**4. TEST RESULTS SUPPORTING THE CLASSIFICATION**

Tests method	Parameter	N° of tests	Results	
			Average of continuous parameter (m)	Parameters it has to fulfill
<b>UNE EN ISO 11925-2:02</b> (Small burner)  "FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE RETARDANT PROCESS 001 FINISHING 120141 BR (95 % - BRIGHT) (Ref.: 0907051-01)	Fs ≤ 150mm	3	Not applicable	yes
	Ignition of the filter paper		Not applicable	yes
<b>UNE-EN 13823:02</b> (SBI)  "FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE RETARDANT PROCESS 001 FINISHING 120141 BR (95 % - BRIGHT) (Ref.: 0907051-01)	FIGRA <sub>0.2MJ</sub> (W/s)	3	167,64	Not applicable
	FIGRA <sub>0.4MJ</sub> (W/s)		161,76	Not applicable
	THR <sub>600s</sub> (MJ)		4,64	Not applicable
	SMOGRA (m <sup>2</sup> /s <sup>2</sup> )		4,18	Not applicable
	TSP <sub>600s</sub> (m <sup>2</sup> )		103,07	Not applicable
	LFS (S/N)		Not applicable	yes
	burning drops/particles (S/N)		Not applicable	yes



Tests method	Parameter	Nº of tests	Results	
			Average of continuous parameter (m)	Parameters It has to fulfil
<b>UNE EN ISO 11925-2:02</b> <b>(Small burner)</b>  FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE-RETARDANT PROCESS 001 FINISHING 120140 MT (20 % - MATT) (Ref.: 0907051-02)	$F_s \leq 150\text{mm}$	3	Not applicable	yes
	Ignition of the filter paper		Not applicable	yes
<b>UNE-EN 13823:02</b> <b>(SBI)</b>  "FIRE-RETARDANT PROCESS 001 BACKGROUND 110040 + FIRE RETARDANT PROCESS 001 FINISHING 120140 MT (20 % - MATT) (Ref.: 0907051-02)	FIGRA <sub>0.2MJ</sub> (W/s)	1	186,81	Not applicable
	FIGRA <sub>0.4MJ</sub> (W/s)		185,36	Not applicable
	THR <sub>600s</sub> (MJ)		4,20	Not applicable
	SMOGRA (m <sup>2</sup> /s <sup>2</sup> )		14,78	Not applicable
	TSP <sub>600s</sub> (m <sup>2</sup> )		97,89	Not applicable
	LFS (S/N)		Not applicable	yes
	burning drops/particles (S/N)		Not applicable	yes



## 5. CLASSIFICATION AND DIRECT APPLICABILITY

### 5.1. Classification

The applicability of the fire performance classification, according to standard UNE EN 13501-1, may be valid for all the products within the same family, if as family we mean the range of products within defined limits of variability of their parameters, in this specific case the parameter superficial brightness degree of the finishing, for which it has been shown that the fire reaction classification does not change.

The classification is valid for all the products of the range since in the representative specimens selected according to the protocol defined by Sector Group SH02 (taking as reference document NB-CDP/SH02/06/029, document CEN/TS 15117:05 and document prEN 15725:08), a similar performance and the same classification are obtained.

Therefore, according to standard UNE-EN 13501-1:07, and in the light of the tests results and the classification criteria attached in the appendix (Table 1 of the said standard), the specimens corresponding fire-retardant MDF board with fibres of an average density of 19 mm (B-s2-d0 according to UNE EN 13501-1:02), varnished by the company with a spray gun, with a fire-retardant system based on polyurethane nature products on a solvent, in a process which consists of one layer of background product with an approximate grammage of 80 g/m<sup>2</sup>, always with the same background product (BACKGROUND 110040) and only one finishing layer of 80 g/m<sup>2</sup>, which can be different regarding the formulation of the superficial brightness, with a drying/curing period between layers of 4 hours. The set shows an approximate density of 0,77 g/cm<sup>3</sup> and an approximate superficial mass of 14,58 kg/m<sup>2</sup>, all this according to information provided by the customer and referenced by him as "RANGE FIRE-RETARDANT PROCESS 001", they are classified in relation to their fire performance as **C-s2-d0**.

Fire performance	Smoke production	Burning drops
C	S2	d0

### 5.2. Direct applicability

The product classified is defined as coating for walls and ceilings, consisting of a range of fire-retardant MDF board with fibres of an average density of 19 mm (B-s2-d0 according to UNE EN 13501-1:02), varnished by the company with a spray gun, with a fire-retardant system based on polyurethane nature products on a solvent, in a process which consists of one layer of background product with an approximate application grammage of 80 g/m<sup>2</sup>, always of the same background product (BACKGROUND 110040) and only one finishing



layer of 80 g/m<sup>2</sup>, which can be different regarding the formulation of the superficial brightness, with a drying/curing period between layers of 4 hours. The set shows an approximate density of 0,77 g/cm<sup>3</sup> and an approximate superficial mass of 14,58 kg/m<sup>2</sup>, all this according to information provided by the customer. Its classification is valid for applications with this final use.

This classification is valid for the final use application as transparent finishing process, to be used only indoors, for fire-retardant wood supports with high performance in its fire reaction (wood, and wood products, classified in their fire reaction as B-s2-d0 according to UNE EN 13501-1).

The specimens are assembled on a calcium fibrosilicate substratum which pretends to be the wall or ceiling to be coated, and the installation is the same.

The specimen is assembled on its supporting plate, through mechanical fixing, without screws or a cavity between the substratum and the specimen.

Likewise, neither horizontal nor vertical joints are reproduced in the specimens to be tested.

The conditions of assembly and fixing, which represent the final conditions of use, are described in the relevant test reports, according to the specifications established in the relevant test standard and in classification standard UNE EN 13501-1:07.

Document UNE-CEN/TS 15447:06 "Assembly and fixing in reaction to fire tests under the Construction Products Directive" is also used as reference document.

Therefore, standardized mounting conditions are used and for this reason, the results of the test obtained are valid for this condition of final use and for a larger number of applications.

## 6. LIMITATIONS

The result of this report concerns only the products described in section 2 of the said report.

This document is neither a standard approval nor a certification of the product.

The duration of the effect of this classification report is subject to the law applicable when it was issued.



## APPENDIX

### CLASSES OF PERFORMANCE TO FIRE REACTION FOR CONSTRUCTION PRODUCTS EXCLUDING FLOOR COATINGS ACCORDING TO STANDARD UNE EN 13.501-1:07

Class	Test method(s)	Classification criteria	Additional compulsory statement
A1	UNE-EN-ISO 1182:2002 <sup>(1)</sup> , and	$\Delta T \leq 30^{\circ}\text{C}$ ; and $\Delta m \leq 50\%$ ; and $t_f = 0$ (that is to say, without sustained flame)	-
	UNE-EN-ISO 1716:2002	$\text{PCS} \leq 2.0 \text{ MJ}\cdot\text{kg}^{-1}$ <sup>(1)</sup> ; and $\text{PCS} \leq 2.0 \text{ MJ}\cdot\text{kg}^{-1}$ <sup>(2)</sup> (2a); and $\text{PCS} \leq 1.4 \text{ MJ}\cdot\text{m}^{-2}$ <sup>(3)</sup> ; and $\text{PCS} \leq 2.0 \text{ MJ}\cdot\text{kg}^{-1}$ <sup>(4)</sup>	-
A2	UNE-EN-ISO 1182:2002 <sup>(1)</sup> , or	$\Delta T \leq 50^{\circ}\text{C}$ ; and $\Delta m \leq 50\%$ ; and $t_f \leq 20\text{s}$	-
	UNE-EN-ISO 1716:2002; and	$\text{PCS} \leq 3.0 \text{ MJ}\cdot\text{kg}^{-1}$ <sup>(1)</sup> ; and $\text{PCS} \leq 4.0 \text{ MJ}\cdot\text{m}^{-2}$ <sup>(2)</sup> ; and $\text{PCS} \leq 4.0 \text{ MJ}\cdot\text{m}^{-2}$ <sup>(3)</sup> ; and $\text{PCS} \leq 3.0 \text{ MJ}\cdot\text{kg}^{-1}$ <sup>(4)</sup>	-
	UNE-EN-13823:2002 (SBI)	$\text{FIGRA} \leq 120 \text{ W}\cdot\text{s}^{-1}$ ; and $\text{LFS} < \text{specimen margin}$ ; and $\text{THR}_{600\text{s}} \leq 7.5 \text{ MJ}$	Smoke production <sup>(5)</sup> ; and Fall of burning drops/particles <sup>(6)</sup>
B	UNE-EN 13823:2002 (SBI); and	$\text{FIGRA} \leq 120 \text{ W}\cdot\text{s}^{-1}$ ; and $\text{LFS} < \text{specimen margin}$ ; and $\text{THR}_{600\text{s}} \leq 7.5 \text{ MJ}$	Smoke production <sup>(5)</sup> ; and Fall of burning drops/particles <sup>(6)</sup>
	UNE-EN-ISO 11925-2:2002 <sup>(8)</sup> . Exposure = 30s	$F_s \leq 150\text{mm}$ in 60s	
C	UNE-EN 13823:2002 (SBI); and	$\text{FIGRA} \leq 250 \text{ W}\cdot\text{s}^{-1}$ ; and $\text{LFS} < \text{specimen margin}$ ; and $\text{THR}_{600\text{s}} \leq 15 \text{ MJ}$	Smoke production <sup>(5)</sup> ; and Fall of burning drops/particles <sup>(6)</sup>
	UNE-EN-ISO 11925-2:2002 <sup>(8)</sup> . Exposure = 30s	$F_s \leq 150\text{mm}$ in 60s	
D	UNE-EN 13823:2002 (SBI); and	$\text{FIGRA} \leq 750 \text{ W}\cdot\text{s}^{-1}$	Smoke production <sup>(5)</sup> ; and Fall of burning drops and particles <sup>(6)</sup>
	UNE-EN-ISO 11925-2:2002 <sup>(8)</sup> . Exposure = 30s	$F_s \leq 150\text{mm}$ in 60s	
E	UNE-EN-ISO 11925-2:2002 <sup>(8)</sup> . Exposure = 15s	$F_s \leq 150\text{mm}$ in 20s	Fall of burning drops/particles <sup>(7)</sup>
F	Without determining the properties		

- (1) For homogeneous products and substantial components of non-homogeneous products  
(2) For any non-substantial components of non-homogeneous products  
(2a) Alternatively, for any non-substantial component which has a  $\text{PCS} \leq 2.0 \text{ MJ}\cdot\text{m}^{-2}$ , provided that the product complies with the following criteria of UNE-EN 13823 2002 (SBI):  $\text{FIGRA} \leq 20 \text{ W}\cdot\text{s}^{-1}$ , and  $\text{LFS} < \text{specimen margin}$ , and  $\text{THR}_{600\text{s}} \leq 4.0 \text{ MJ}$ ; and s1; and d0.  
(3) For any non-substantial internal component of non-homogeneous products  
(4) For the product as a whole  
(5)  $s1 = \text{SMOGRA} \leq 30\text{m}^2\cdot\text{s}^{-2}$  and  $\text{TSP}_{600\text{s}} \leq 50\text{m}^2$ ;  $s2 = \text{SMOGRA} \leq 180\text{m}^2\cdot\text{s}^{-2}$  and  $\text{TSP}_{600\text{s}} \leq 200\text{m}^2$ ,  
 $s3 = \text{neither } s1 \text{ nor } s2$   
(6) d0 = Without fall of burning drops and particles in UNE-EN 13823 2002 (SBI) in 600s; d1 = Without fall of burning drops and particles in 10s in UNE-EN 13823 2002 (SBI) in 600s; d2 = neither d0 nor d1; ignition of paper in UNE-EN-ISO 11925-2 2002 determines a d2 classification  
(7) Success = absence of paper ignition (without classification); Failure = paper ignition (d2 classification)  
(8) Under conditions of surface flame etching and, if appropriate, for the final usage conditions of the product, lateral flame etching



**INFORMATION ANNEX (excluded from the scope of the accreditation):**  
**CLASSIFICATION SYSTEM OF FIRE REACTION ACCORDING TO STANDARD UNE EN 13.501-1:07**

The European classification system as far as the materials performance is concerned in their fire reaction includes 7 euroclasses or main classifications: A1, A2, B, C, D, E and F. Euroclasses A1, A2 and B correspond to the non-combustible and little combustible product classes. They represent those construction products which are safer regarding safety against fire. Euroclasses C, D and E correspond to classified products as combustible and represent the most dangerous construction products regarding their fire performance. Finally, the products classified with Euroclass F do not undergo any kind of evaluation regarding their benefits with respect to their reaction to fire.

On the same regulation base, a specific system in order to classify the products for floor lining has been developed: A1<sub>fl</sub>, A2<sub>fl</sub>, B<sub>fl</sub>, C<sub>fl</sub>, D<sub>fl</sub>, E<sub>fl</sub> y F<sub>fl</sub> (subscript "fl" means floor lining -floor).

Except for classes A1 and F, in the case of materials for walls and roofs lining, the rest of classes are complemented by two new subclassifications, one regarding the production and opacity of smoke and the other regarding the production of burning drops or particles.

The levels of these parameters are three:

↳ For the smoke opacity, levels s1 (low amount and speed of smoke emission), s2 (middle amount and speed of smoke emissions) and s3 (high amount and speed of smoke emissions).

↳ For burning drops or particles, the levels are d0 (burning drops/particles are not produced), d1 (there are not any burning drops/particles whose duration is longer than 10 seconds) and d2 (products which are not classified neither as d0 nor as d1).

In the case of floor lining, with the exception also of classes A1 and F, the subclassification only affects at the levels of emission and opacity of smoke and they are only two, s1 (low percentage of smoke emission and production) and s2 (products for which no behaviour regarding the smoke is declared or those who do not meet the condition of s1).

**Class A1:** materials which cannot contribute in any phase of the fire including the corresponding one to the totally developed fire. *It is not affected by the additional classification of smokes and fall of drops.*

**Class A2:** they have to meet the same criteria as class B. Besides, in conditions of totally developed fire, these products do not have to contribute significantly to the fire load and the growth of the fire. *Additional classification of smoke production and fall of drops.*

**Class B:** very limited contribution to fire. It is like class C but meeting strictest requirements. *It is affected especially by the additional classification of smoke production and fall of drops.* Besides, in case of a totally developed fire, these products will not increase significantly the thermal load of the premises and the development of the fire.

**Class C:** limited contribution to fire. It is like class D but meeting the strictest requirements. Besides, under thermal etching by a single burning item they have to offer a side propagation of the limited flame. *It is affected especially by the additional classification of smoke production and fall of drops.*

**Class D:** acceptable contribution to fire. Products which meet the criteria corresponding to class E and which are able to resist, during a longer period of time, the etching of a small flame without producing a substantial propagation of the flame. Besides, they have to be able to resist thermal etching of a single burning item with a sufficient delay and with a limited heat release. *It is affected especially by the additional classification of smoke production and fall of drops.*

**Class E:** Products which are able to resist, during a short period of time, the etching of a flame without producing a substantial propagation of the flame. *It is only affected by the additional classification of fall of drops.*

**Class F:** without a determined behaviour. Materials for which characteristics of fire performance have not been specified or which cannot be classified into any of the other classes.

subclasses related to smoke production	subclasses related to the production of burning drops/particles
S1 (low amount and speed of smoke emission) S2 (middle amount and speed of smoke emission) S3 (high amount and speed of smoke emission)	d0 (no burning drops/particles are produced) d1 (there are not burning drops/particles whose duration is longer than 10s) d2 (products which are not classified neither as d0 nor as d1)

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Jacqueline ESCALLE PILLET, Intérprete Jurado de los idiomas inglés y francés, **CERTIFICA** que la que antecede es traducción fiel y completa al idioma inglés, de un informe de clasificación, redactado en idioma castellano.

En VALENCIA (ESPAÑA), a diecinueve de septiembre del año dos mil doce.

I, Jacqueline ESCALLE PILLET, Sworn Translator of English and French. **CERTIFY** that the text above written is a true and complete translation into English, of a classification report written in Spanish.

In VALENCIA (SPAIN), on the nineteenth day of September two thousand and twelve

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