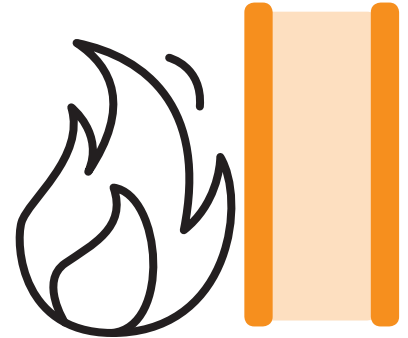




# CERTIFICATES OF REACTION TO FIRE

## Reaction to fire

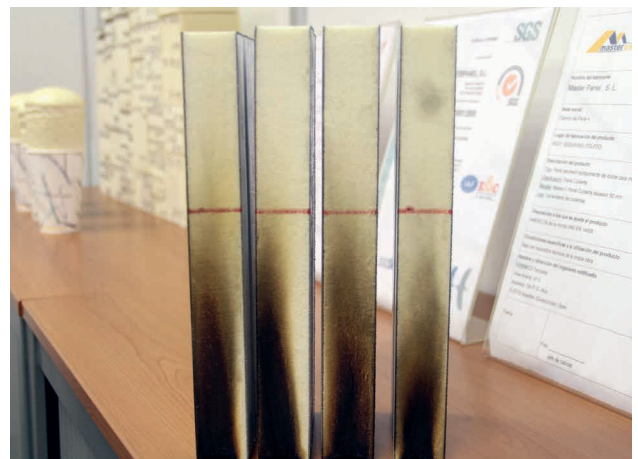
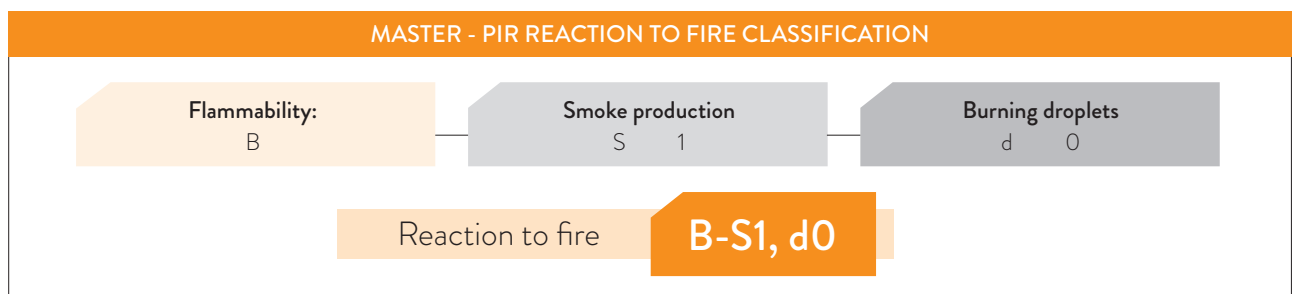
In the last decade, polyurethane foams have evolved into construction elements with an excellent reaction to fire. In this context we should emphasize the polyisocyanurate foams (PIR), which are modified polyurethane foams whose molecules, unlike the linear chains of other polyurethanes (PUR), have a network structure that gives them fire-resistant properties. These foams have resulted in a new generation of panels called **Master-PIR**.



These panels are mainly characterized by their reaction to fire, and may be called self-extinguishing, which greatly reduces fire propagation and consequent smoke emissions. The polyurethane does not melt or drip when heated, and can help a building to resist the spread of fire. **Master-PIR** panels exceed fire safety standards and insurance requirements for a wide range of applications.

European legislation classifies the reaction to fire of construction products according to UNE- EN 13501 standard: Euroclass, which measures combustibility, quantity and opacity of smoke and inflamed particle fall. **Master-PIR** panels get the best fire reaction rating for polyurethane and polyisocyanurate foams, which is B-s1,d0.

In order to confirm the excellent fire reaction properties of Master-PIR panel foam, Masterpanel has tested **Master-PIR** foam according to ASTM E-84: Standard Test Method for Surface Burning Characteristics of Building Materials, by measuring flame propagation and smoke production. The results of these tests confirm the excellent fire reaction rating of **Master-PIR** panel foam by obtaining the best classification, i.e. Class A.





Classification Report  
n° 102643891SAT-001A REV1

# ASTM E84

Flame spread index: 20

Smoke developed index: 300

## Class A

Project No. 102643891SAT-001A Rev1  
Master Panel SL

February 6, 2018  
Page 2 of 9

## ABSTRACT

Specimen I. D. "Master-PIR Panel"

**Test Standard:** ASTM E84-15b TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS (UL 723, UBC 8-1, NFPA 255)

Test Date: July 5, 2016

Client: Master Panel SL

Test Results:

|                       |     |
|-----------------------|-----|
| FLAME SPREAD INDEX    | 20  |
| SMOKE DEVELOPED INDEX | 300 |

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of the report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Joseph Martinez  
Technician III

July 11, 2016

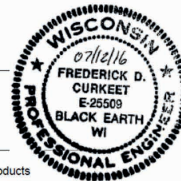
Reviewed and approved:

Servando Romo  
Project Manager

Rick Curkeet, PE  
Chief Engineer-Building & Hearth Products

July 11, 2016

July 11, 2016



# UNE-EN 13501

## COMBUSTIBILITY

|          |                                             |
|----------|---------------------------------------------|
| A1       | No contribution to fire                     |
| A2       | No contribution to fire                     |
| <b>B</b> | <b>Very limited contribution to fire</b>    |
| C        | Limited contribution to fire                |
| D        | Moderate contribution to fire               |
| E        | High contribution to fire                   |
| F        | Unclassified, with undetermined performance |

SMOKE OPACITY: Amount and speed of emission

|    |        |
|----|--------|
| s1 | Low    |
| s2 | Medium |
| s3 | High   |

## FALL OF BURNING PARTICLES

|    |                             |
|----|-----------------------------|
| d0 | No fall in 600 sec          |
| d1 | No fall in more than 10 sec |
| d2 | No d0, no d1                |



## Classification Report n° C3066T16

Classification obtained in the laboratories of the Association for the promotion of research and technology of security against fires (AFITI), experts in the study of fire performance of multiple products used in construction.





Polígono Industrial La Cárdena  
Camino de Toledo, s/n • 45221 Esquivias / Toledo / Spain  
Tfno.: +34 925 519 926  
[www.magon.es](http://www.magon.es)  
[masterpanel@magon.es](mailto:masterpanel@magon.es)

---

This document is not a safety manual.

The content and recommendations in the catalogue are informative and non-binding.

**MASTER PANEL, S.L.** reserves the right to modify the content of this document without prior notice.

General Sales Conditions available on our website [www.magon.es](http://www.magon.es)



Polígono Industrial La Cárdena  
Camino de Toledo, s/n • 45221 Esquivias / Toledo / Spain  
Tfno.: +34 925 519 926  
[www.magon.es](http://www.magon.es)

MPCIUSA.25.1

