

# EN 45545-2: 2013 + A1:2015



## Summary Test Report – Requirement Table 5 (R1 & R7)

Test Method References “T02” (ISO 5658-2:2006+A1:2011. Spread of Flame - Lateral Spread of flame test on Building and Transport Products in Vertical Configuration), “T03.01” (ISO 5660-1: 2015; Heat release rate (Cone Calorimeter Method) & Smoke Production Rate (Dynamic Measurement), “T10.01” / “T10.02” / “T10.04” (ISO 5659-2: 2012; Plastics – Smoke Generation. Part 2 Determination of Optical Density by a Single Chamber Method) and “T11.01” (Gas Analysis in the Smoke Box EN ISO 5659-2, using FTIR Technique)

A Report To: PPG Italia

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Testing  
Advising  
Assuring

## Executive Summary

**Objective** To assess the results of tests performed in accordance with methods T02, T03.01, T10.01 / T10.02 / T10.04 and T11.01 as defined in EN 45545-2: 2013 + A1:2015 at an irradiance level of 50kW/m<sup>2</sup> without a pilot flame, on specimens of a product and to provide an opinion of compliance with the requirements for R1 & R7, as defined in EN 45545-2: 2013 + A1:2015.


Generic Description	Product reference	Thickness	Weight per unit area, density or specific gravity
Coated glass reinforced phenolic	"PPG R50059/698/2"	4mm	~5.1kg/m <sup>2</sup> *
<b>Individual components used to manufacture composite:</b>			
Coating	"Selemix Aqua 8-110/8-111"	30-40μ	1.9
Substrate	Unable to provide	4mm	1.3g/cm <sup>3</sup>
<b>*determined by Exova Warringtonfire</b>			
<b>Please see page 6 of this test report for the full description of the product tested</b>			

**Test Sponsor** PPG Italia, Via Comasina 121, Milan, Italy


**Opinion** We consider the results of the tests confirmed in reports referenced 296285, 396287 & 396289 to the test methods detailed above demonstrate that the product, as tested, complies with the requirements of R1 (detailed in Table 5 of EN 45545-2: 2013 + A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

We consider the results of the tests confirmed in reports referenced 296285, 396287 & 396289 to the test methods detailed above demonstrate that the product, as tested, complies with the requirements of R7 (detailed in Table 5 of EN 45545-2: 2013 + A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

## Signatories



Responsible Officer  
 B. Dean \*  
 Technical Leader



Authorised  
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 Business Unit Head

\* For and on behalf of **Exova Warringtonfire**.

Report Issued: 3rd April 2018

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## Test Details

### Terms Of Reference

To assess the results of tests performed in accordance with methods T02, T03.01, T10.01 / T10.02 / T10.04 and T11.01 as defined in EN 45545-2: 2013 + A1:2015 at an irradiance level of 50kW/m<sup>2</sup> without a pilot flame, on specimens of a product and to provide an opinion of compliance with the requirements for R1 & R7, as defined in EN 45545-2: 2013 + A1:2015.

**Note** – Method ‘T02’ requires testing in accordance with ISO 5658-2:2006. **Exova Warringtonfire** conduct the test in accordance with the latest version of this standard (ISO 5658-2:2006 + A1:2011).

The only difference is the calculation used to determine the Qsb value. This is not required to classify in accordance with EN 45545-2:2015, and will therefore have no affect on the overall classification.

### Introduction

Specimens of a product have been tested in accordance with the test methods “T02” (ISO 5658-2:2006+A1:2011. Spread of Flame - Lateral Spread of flame test on Building and Transport Products in Vertical Configuration), “T03.01” (ISO 5660-1: 2015; Heat release rate (Cone Calorimeter Method) & Smoke Production Rate (Dynamic Measurement), “T10.01” / “T10.02” / “T10.04” (ISO 5659-2: 2012; Plastics – Smoke Generation. Part 2 Determination of Optical Density by a Single Chamber Method) and “T11.01” (Gas Analysis in the Smoke Box EN ISO 5659-2, using FTIR Technique) as specified in EN 45545-2:2013 + A1:2015 “Requirements for Fire Behaviour of Materials and Components”. The results of the tests are fully reported in the **Exova Warringtonfire** test reports No's. 396285, 396287 & 396289.

This summary report has been prepared at the request of the sponsor and relates the results of the tests to the requirements for R1 & R7, as defined in Table 5 of EN 45545-2: 2013 + A1:2015.

This summary should be read in conjunction with, and not accepted as a substitute for the **Exova Warringtonfire** test reports No's. 396285, 396287 & 396289. Those test reports may include additional information which may be relevant to the assessment of the potential fire hazard of the product.

### Face subjected to tests

The specimens were mounted in the test positions such that the coated face was exposed to the heating conditions of the tests.

### Results of test

The following results were obtained for the specimens, which were tested.

“T02” ISO 5658-2:2006+A1:2011

**Critical flux at extinguishment (CFE) = 28.7 kW/m<sup>2</sup>**  
**Flaming droplets with sustained flaming (>10s) = No**

“T03.01” ISO 5660-1: 2015

**MARHE = 41.92 kW/m<sup>2</sup>**

“T10.01” / “T10.02” / T10.04 ISO 5659-2: 2012

**Ds (4) = 62**  
**VOF4 = 108**  
**Ds max. = 108**

“T11.01” Gas Analysis in the Smoke Box ISO, Using FTIR

**CIT<sub>4mins</sub> = 0.11**  
**CIT<sub>8mins</sub> = 0.26**

**Applicability of test results**

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

The test results relate only to the specimens of the product in the form in which they were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and will therefore invalidate the test results. It is the responsibility of the supplier of the product to ensure that the product which is supplied is identical with the specimens which were tested.

## Description of Test Specimens

The description of the system given below has been prepared from information provided by the sponsor of the test. This information has not been independently verified by **Exova Warringtonfire**.

All values quoted are nominal, unless tolerances are given.

General description		Coated glass reinforced phenolic
Product reference		"PPG R50059/698/2"
Overall thickness		4mm (stated by sponsor)
Overall weight per unit area		~5.1kg/m <sup>2</sup> (determined by <b>Exova Warringtonfire</b> )
Coating	Generic type	Waterborne 2-pack polyurethane coating
	Product reference	"Selemix Aqua 8-110 / 8-111"
	Name of manufacturer	PPG Industries
	Colour reference	"Ral 7035" "Grey" (observed by <b>Exova Warringtonfire</b> )
	Number of coats	2
	Application thickness per coat	30-40μ
	Specific gravity	1.9
	Application method	Conventional high volume low spray
	Curing process per coat	20 minutes air dry between coats at 20°C
Flame retardant details		<b>See Note 1 Below</b>
Glass reinforced phenolic	Generic type	Glass reinforced phenolic  The sponsor was unable to provide specific details of the glass reinforcement and resin
	Product reference	<b>See Note 2 Below</b>
	Name of manufacturer	Pro Test Panels
	Thickness	4mm
	Density	1.3g/cm <sup>3</sup>
Flame retardant details		<b>See Note 1 Below</b>
Brief description of manufacturing process		<b>See Note 2 Below</b>

**Note 1: The sponsor of the test has confirmed that no flame retardants were used in the production of this component.**

**Note 2: The sponsor of the test was unable to provide this information.**

## Classification

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### Opinion

We consider the results of the tests confirmed in reports referenced 296284, 396286 & 396288 to the test methods detailed above demonstrate that the product, as tested, complies with the requirements of R1 (detailed in Table 5 of EN 45545-2: 2013 + A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

We consider the results of the tests confirmed in reports referenced 296284, 396286 & 396288 to the test methods detailed above demonstrate that the product, as tested, complies with the requirements of R7 (detailed in Table 5 of EN 45545-2: 2013 + A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

### Validity of opinion

This opinion is based on the requirements of EN 45545-2: 2013 + A1:2015 at the date of this report. If EN 45545-2 is revised or amended in any way subsequent to that date, care must be taken to ensure that this opinion is not invalidated by those revisions or amendments.

The opinion has been formulated on the assumption that the specimens are representative of the product in practice. **Exova Warringtonfire** was not involved in any sampling or selection procedures which would confirm this or in any audit testing which would provide confidence in the consistency of the product in the tests.

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## Revision History

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Revised By:	Approved By:
Reason for Revision:	

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