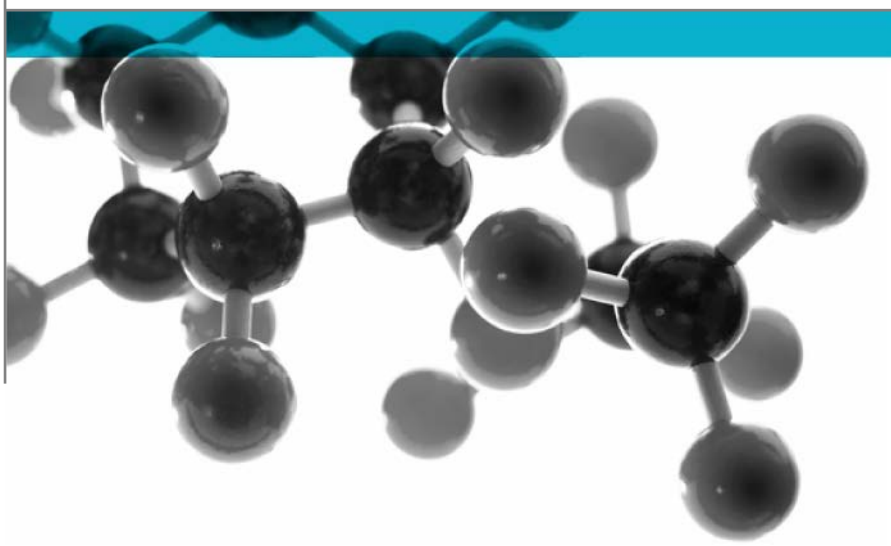
Exova Warringtonfire
Holmesfield Road
Warrington
WA1 2DS
United Kingdom

T : +44 (0 1925 655116
F : +44 (0) 1925 655419
E : warrington@exova.com
W: www.exova.com

ISO 5658-2:2006+A1:2011



Reaction to Fire Tests – Spread of Flame - Lateral Spread of flame test on Building and Transport Products in Vertical Configuration

A Report To: PPG Italia

Document Reference: 396284

Date: 13th March 2018

Issue No.: 1

Testing
Advising
Assuring

UKAS TESTING
0249

Executive Summary

Objective To determine the performance of the following product when tested in accordance with ISO 5658-2:2006+A1:2011

Generic Description	Product reference	Thickness	Weight per unit area, density or specific gravity
Coated aluminium	"PPG R50059/698/1"	2mm	5.50kg/m²*
Individual components used to manufacture composite:			
Coating	"Selemix Aqua 8-110/8-111"	30-40µ	1.9
Substrate	"6082 T6"	2mm	2.7g/cm^3
***determined by Exova Warringtonfire**			
Please see page 6 of this test report for the full description of the product tested			

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

Summary of Test Results:

Parameter	Units	Specimen Number			Average
		1	2	3	
Heat for Sustained Burning (Q_{sb})	MJm^{-2}	*	*	*	*
Critical flux at Extinguishment (CFE)	kW/m^2	47.30	45.00	45.00	45.77
Flaming droplets with sustained flaming (>10s)	N/A	N/A	N/A	N/A	N/A

***Could not calculate due to the flame travel not reaching 180mm**

Date of Test 27th February 2018

Signatories

Responsible Officer
T. Mort *
Senior Technical Officer

Authorised
S. Deeming *
Business Unit Head

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

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Test Details

Introduction

A test has been conducted in accordance with the procedure specified in ISO 5658-2:2006+A1:2011 Reaction to Fire Tests – Spread of Flame – Part 2: Lateral Spread on Building and Transport Products in Vertical Configuration on the specimens detailed in this report. The test was conducted using an impinging propane flame. It is advised that this report is read in conjunction with the aforementioned document.

Scope of test

ISO 5658-2:2006+A1:2011 specifies a method of test for measuring the lateral spread of flame along the surface of a specimen of a product orientated in the vertical position. It provides data suitable for comparing the performance of essentially flat materials, composites or assemblies, which are used primarily as the exposed surfaces of walls.

Instruction to test

The test was conducted on the 27th February 2018 at the request of PPG Italia, the sponsor of the test.

Conditioning of specimens

The specimens were received on the 16th February 2018.

Prior to test the specimens were conditioned to constant mass at a temperature of 23 ± 2°C and a relative humidity of 50 ± 5%.

Exposed face

The coated face of the specimens was exposed to the radiant heat of the test when the specimens were mounted in the test position.

Condition of specimen edges

Coating applied to test face only, not applied to edges

Photograph of specimen

Substrate

The specimens were tested with a 12mm thick calcium silicate based backing board present.

Provision of test specimens

The specimens were supplied by the sponsor of the test. **Exova Warringtonfire** was not involved in any selection or sampling procedure.

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 aluminium
Product reference		"PPG R50059/698/1"
Overall thickness		2mm (stated by sponsor) 2.07mm (determined by **Exova Warringtonfire**)
Overall density		5.50kg/m² (determined by **Exova Warringtonfire**)
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 **Exova Warringtonfire**)
	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	**See Note 1 Below**
Aluminium	Generic type	Aluminium
	Product reference	"6082 T6"
	Name of manufacturer	Pro Test Panels
	Thickness	2mm
	Density	2.7g/cm^3
	Flame retardant details	The substrate is inherently flame retardant
Brief description of manufacturing process		**See Note 2 Below**

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.

Test Results

Applicability of test results

The test results relate only to the behaviour of the specimens 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 relate only to the specimens of the manufactured product in the form in which they are tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product which is supplied or used is fully represented by the specimens which were tested.

The test results relating to the spread of flame parameters for the individual specimens together with observations made during the test and comments on any difficulties encountered during the test are given in Table 1.

Test results

A total of three specimens were tested and the following results were obtained

Parameter	Units	Specimen Number			Average
		1	2	3	
Heat for Sustained Burning (Q_{sb})	MJm^{-2}	*	*	*	*
Critical flux at Extinguishment (CFE)	kW/m^2	47.30	45.00	45.00	45.77
Flaming droplets with sustained flaming (>10s)	N/A	N/A	N/A	N/A	N/A

***Could not calculate due to the flame travel not reaching 180mm**

Validity

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

Appendix 1 – Observations during test

Specimen No:	1		Heat for Sustained Burning (MJ/m^2)	2		Heat for Sustained Burning (MJ/m^2)	3		Heat for Sustained Burning (MJ/m^2)
Time to Ignition: (min:sec)	01:25			00:57			00:29		
Time to Travel	min	sec		min	sec		min	sec	
50mm	01	30	4.55	01	17	3.89	01	05	3.28
100mm	01	46	5.25	01	19	3.91	01	18	3.86
150mm				01	31	4.29	01	24	3.96
200mm									
250mm									
300mm									
350mm									
400mm									
450 mm									
500mm									
550mm									
600mm									
650mm									
700mm									
750mm									
800mm									
Duration of Test (min:sec)	14:37			15:01			15:46		
Final Travel (mm)	130			160			160		
C.F.E. (kw/m^2)	47.30			45.00			45.00		

OBSERVATIONS:

None

Revision History

Issue No :	Re - Issue Date :
Revised By:	Approved By:
Reason for Revision:	

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