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BS EN ISO 11925-2: 2010



Ignitability Of Building Products Subjected To Direct Impingement Of Flame Part 2: Single Flame Source Test

A Report To: Euro Panel Products Pvt. Ltd.

Document Reference: 364261

Date: 27th May 2016

Issue No.: 1

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Testing
Advising
Assuring



Executive Summary

Objective To determine the performance of the following product when tested in accordance with BS EN ISO 11925-2:2010.


Generic Description	Product reference	Thickness	Weight per unit area / density / specific gravity
Polyvinyl diene fluoride (PVDF) coated mineral filled flame retardant grade aluminium composite panel	"Eurobond FR Class B1"	4.0±0.2mm	7.6kg/m ² ±5%
Individual components used to manufacture composite:			
Coating (test face)	"PVDF"	2 x 25±3microns	Unwilling to provide
Aluminium	"Aluminium Coil"	0.50±0.02mm	2.71g/cm ³
Adhesive	"Adhesive Film"	Unwilling to provide	Not stated
Core	"Mineral Filled Non-Combustible/Fire Retardant Core"	3.00±0.02mm	1.3 - 1.4g/cm ³
Please see pages 5 & 6 of this test report for the full description of the product tested			

Test Sponsor Euro Panel Products Pvt. Ltd., 702, Aravali Business Centre, Ramdas Sutrale Marg, Borivali (West), Mumbai – 400092, Maharashtra, India.


Test Results: **On the set of six specimens which were subject to surface application, the maximum flame height reached was observed to be 0 ± 0.9mm.**
On the set of six specimens which were subject to edge application, the maximum flame height reached was observed to be 0 ± 0.9mm
 The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Date of Test 23rd May 2016

Signatories



Responsible Officer
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Technical Officer



Authorised
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Business Unit Head

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

Report Issued: 27th May 2016

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Test Details

Purpose of test	<p>To determine the performance of specimens of a product when they are subjected to the conditions of the test specified in BS EN ISO 11925-2:2010 "Reaction to Fire tests - Ignitability Of Building Products Subjected to Direct Impingement of Flame – Part 2: Single Flame Source Test".</p> <p>The test was performed in accordance with the procedure specified in BS EN ISO 11925-2:2010 Reaction to Fire Tests - Ignitability of Building Products subjected to direct impingement of flame – Part 2: Single Flame Source Test, and this report should be read in conjunction with that BS EN ISO Standard.</p>
Scope of test	<p>BS EN ISO 11925-2 specifies a method of test for determining the ignitability of building products by direct small flame impingement under zero impressed irradiance using specimens tested in a vertical orientation.</p>
Fire test study group/EGOLF	<p>Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and EGOLF have identified a number of such areas and has agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.</p>
Instruction to test	<p>The test was conducted on the 23rd May 2016 at the request of Euro Panel Products Pvt. Ltd., the sponsor of the test.</p>
Provision of test specimens	<p>The specimens were supplied by the sponsor of the test. Exova Warringtonfire was not involved in any selection or sampling procedure.</p>
Conditioning of specimens	<p>The specimens were received on the 22nd April 2016.</p> <p>Prior to test the specimens were stored for 2 days in a standard atmosphere as defined in BS EN 13238:2010 Conditioning Procedures and General Rules for selection of substrates until constant mass was achieved.</p>
Intended application	<p>External wall cladding.</p>
Substrate	<p>The specimens were tested without a substrate present.</p>
Flame application time	<p>The flame was applied for 30 seconds.</p>

Description of Test Specimens

The description of the specimens given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

General description		Polyvinyl diene fluoride (PVDF) coated mineral filled flame retardant grade aluminium composite panel
Product reference		"Eurobond FR Class B1"
Name of manufacturer		See Note 1 below
Thickness		4.0±0.2mm (stated by sponsor) 4.0mm (determined by Exova Warringtonfire)
Weight per unit area		7.6kg/m ² ±5% (stated by sponsor) 7.02kg/m ² (determined by Exova Warringtonfire)
Product configuration		<ul style="list-style-type: none"> • Coating (test face) • Aluminium • Adhesive • Core • Adhesive • Aluminium
Coating (Test face)	Generic type	PVDF
	Product reference	"PVDF"
	Name of manufacturer	See Note 1 below
	Colour reference	"ER 908 Milky White"
	Number of coats	Two
	Application thickness per coat	25±3microns
	Specific gravity	See Note 1 below
	Application method	Thermo – cured coil coating
	Curing process per coat	See Note 1 below
	Flame retardant details	See Note 2 Below
Aluminium	Generic type	Aluminium
	Product reference	"Aluminium Coil"
	Name of manufacturer	See Note 1 below
	Thickness	0.50±0.02mm
	Density	2.71g/cm ³
	Colour reference	See Note 1 below
	Flame retardant details	The component is inherently flame retardant
Adhesive	Generic type	Polyethylene
	Product reference	"Adhesive Film"
	Name of manufacturer	Dupont
	Application thickness	See Note 1 below
	Application method	Lamination
	Flame retardant details	See Note 2 below
	Curing process	See Note 1 below

Continued on next page

Core	Generic type	See Note 1 below
	Product reference	"Mineral Filled Non-Combustible/Fire Retardant Core"
	Detailed description	See Note 1 below
	Name of manufacturer	See Note 1 below
	Thickness	3.00±0.02mm
	Density	1.3 - 1.4g/cm ³
	Colour reference	"White"
	Flame retardant details	See Note 1 below
Brief description of manufacturing process		Extrusion lamination

Note 1: The sponsor was unwilling to provide this information.

Note 2: The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component.

Test Results

Number of specimens tested

Six specimens were tested, each of which were subjected to surface exposure to flame with the coated face exposed.

Six specimens were tested, each of which were subjected to edge exposure to flame with the coated face exposed.

Applicability of test results

The test results relate to the behaviour of the test specimens of a 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 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 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 for the individual specimens, together with observations made during the test and comments on any difficulties encountered during the test are given in Tables 1 and 2.

On the set of six specimens which were subject to surface application, the maximum flame height reached was observed to be $0 \pm 0.9\text{mm}$.

On the set of six specimens which were subject to edge application, the maximum flame height reached was observed to be $0 \pm 0.9\text{mm}$

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

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.

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Table 1**Test Flame Application Position - Surface Of Coated Face**

Specimen No.	Ignition Yes/No	Time from start of test for flame tip to reach 150mm (seconds)	Extent of Flame Spread (± 0.9 mm)	Flaming Debris	Glowing	Extent of Damaged Area (mm)	
						Height	Width
1	No	Did not reach	Nil	None	None	Nil	Nil
2	No	Did not reach	Nil	None	None	Nil	Nil
3	No	Did not reach	Nil	None	None	Nil	Nil
4	No	Did not reach	Nil	None	None	Nil	Nil
5	No	Did not reach	Nil	None	None	Nil	Nil
6	No	Did not reach	Nil	None	None	Nil	Nil

Table 2**Test Flame Application Position - Edge Of Coated Face**

Specimen No.	Ignition Yes/No	Time from start of test for flame tip to reach 150mm (seconds)	Extent of Flame Spread (± 0.9 mm)	Flaming Debris	Glowing	Extent of Damaged Area (mm)	
						Height	Width
1	No	Did not reach	Nil	None	None	2	4
2	No	Did not reach	Nil	None	None	10	4
3	No	Did not reach	Nil	None	None	17	5
4	No	Did not reach	Nil	None	None	14	6
5	No	Did not reach	Nil	None	None	12	6
6	No	Did not reach	Nil	None	None	10	5

Revision History

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