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Testing. Advising. Assuring.

Title:

CLASSIFICATION OF
REACTION TO FIRE
PERFORMANCE
IN ACCORDANCE WITH
EN 13501-1:2007+A1: 2009.

Notified Body No:

0833

Product Name:

"Millboard"

Report No:

WF 363719

Issue No:

1

Prepared for:

The Millboard Company
Limited
Castle Court
Bodmin Road
Coventry
CV2 5DB

Date:

8th April 2016

UKAS TESTING
0249

1. Introduction

This classification report defines the classification assigned to "Millboard", a high density polyurethane reinforced with glass fibre and stone rigid board product, fillers in accordance with the procedures given in EN 13501-1:2007+ A1: 2009.

2. Details of classified product

2.1 General

The product, "Millboard", is defined as being suitable for floorcovering applications.

2.2 Product description

The product, "Millboard", is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description	Rigid board product manufactured in high density polyurethane, reinforced with glass fibre and stone fillers. The surface is a softer elastomeric material with additives.
Product reference	"Millboard"
Name of manufacturer	**See Note 1 Below**
Thickness	31.55mm (determined by **Exova Warringtonfire**)
Weight per unit area	18.20kg/m^2 (determined by **Exova Warringtonfire**)
Colour reference	"Grey" (observed by **Exova Warringtonfire**)
Flame retardant details	**See Note 1 Below**
Brief description of manufacturing process	**See Note 1 Below**

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

The description of the specimens as given above is not as detailed as would usually be the case for descriptions included in **Exova Warringtonfire** test reports and the description may not fully comply with the requirements of the test standard. In all other respects however the tests were conducted fully in accordance with the requirements of the test standard and the test results are valid**.**

3. Test reports & test results in support of classification.

3.1 Test reports.

Name of Laboratory	Name of sponsor	Test reports/ extended application report Nos.	Test method / extended application rules & date
Exova Warringtonfire	The Millboard Company Limited	WF 361967	EN ISO 11925-2
Exova Warringtonfire	The Millboard Company Limited	WF 361933	EN ISO 9239-1

3.2 Test results

Test method & test number		Parameter	No. tests	Results	
				Continuous parameter - mean (m)	Compliance with parameters
EN ISO 9239-1		Critical flux	3	8.6kW/m²	Compliant
		Smoke		298.78%min	Compliant
EN ISO 11925-2	(15s exposure – surface of decorative face)	F_s	6	Nil	Compliant
		Flaming droplets/ particles		None	Compliant
	(15s exposure – edge of decorative face)	F_s	6	50mm	Compliant
		Flaming droplets/ particles		None	Compliant

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 9 of EN 13501-1:2007+A1: 2009.

4.2 Classification

The product, "Millboard", a high density polyurethane reinforced with glass fibre and stone rigid board product, in relation to its reaction to fire behaviour is classified:

B_{FL}

The additional classification in relation to smoke production is:

s1

The format of the reaction to fire classification for floorings is:

Fire Behaviour		Smoke Production	
B_{FL}	-	s	1

i.e. B_{FL} – s1

Reaction to fire classification: B_{FL} – s1

4.3 Field of application

This classification is valid for the following end use applications:

i) Floorcovering applications applied over any substrate with a minimum density of 1800kg/m³, having a minimum thickness of 8mm and a fire performance of $A2_{FL}$ or better.

ii) Installed with or without adhesive.

This classification is also valid for the following product parameters:

Floorcovering thickness	No variation allowed
Floorcovering weight per unit area	No variation allowed
Floorcovering composition	No variation allowed
Floorcovering construction	No variation allowed
Colour/Pattern	Any variation allowed

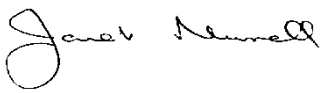
"The classification assigned to the product in this report is appropriate to a declaration of conformity by the manufacturer within the context of system 3 attestation of conformity and CE marking under the Construction Products Directive. The manufacturer has made a declaration, which is held on file. This confirms that the products design requires no specific processes, procedures or stages (e.g. no addition of flame-retardants, limitation of organic content, or addition of fillers) that are aimed at enhancing the fire performance in order to obtain the classification achieved. As a consequence the manufacturer has concluded that system 3 attestation is appropriate. The test laboratory has, therefore, played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide for traceability of the samples tested."

SIGNED

……

Matthew Dale
Certification Engineer
Technical Department

APPROVED



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Janet Murrell
Technical Manager
Technical Department
on behalf of **Exova Warringtonfire**

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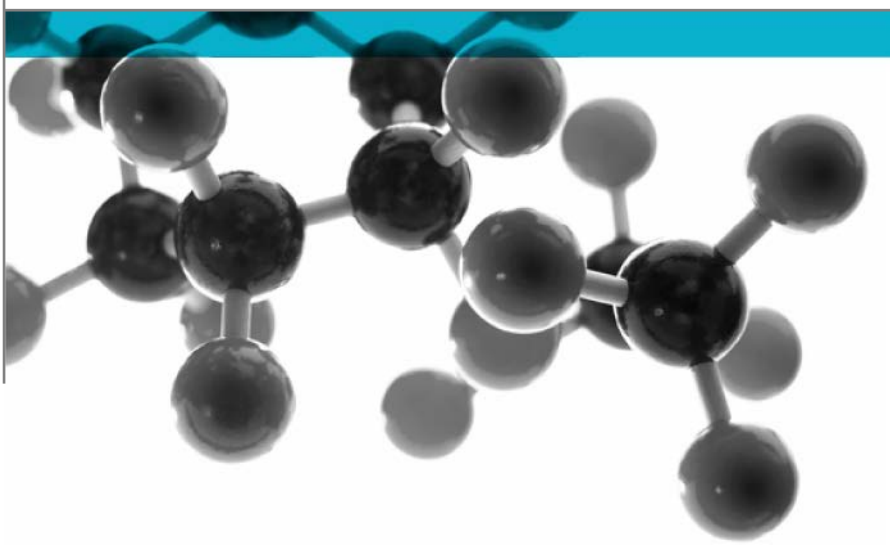
BS EN ISO 11925-2: 2010



Ignitability Of Building Products Subjected To Direct Impingement Of Flame

Part 2: Single Flame Source Test

A Report To: The Millboard Company Limited

Document Reference: 371411

Date: 31st October 2016

Issue No.: 1

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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 or density
Resin moulded board	"MDE176G"	32mm	16.76kg/m²*
Individual components used to manufacture composite:			
Resin	Unwilling to provide	Unwilling to provide	Unwilling to provide
Glass reinforcement	Unwilling to provide	Unwilling to provide	Unwilling to provide
***determined by Exova Warringtonfire**			
Please see page 6 of this test report for the full description of the product tested			

Test Sponsor The Millboard Company Limited, Ryton Lodge, Oxford Road, Ryton on Dunsmore, CV8 3EJ

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 60 ± 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 12th September 2016

Signatories

Responsible Officer
C Jacques*
Technical Officer

Approved
T. Mort *
Senior Technical Officer

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

Authorised
S. Deeming *
Business Unit Head

Report Issued: 31st October 2016

CONTENTS **PAGE NO.**

Test Details

Purpose of test

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".

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.

Scope of test

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.

Fire test study group/EGOLF

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.

Instruction to test

The test was conducted on the 12th September 2016 at the request of The Millboard Company Limited, the sponsor of the test.

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.

Conditioning of specimens

The specimens were received on the 1st September 2016.

Prior to test the specimens were stored for 11 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.

Intended application

Floor covering

Substrate

The specimens were tested with an 8mm thick fibre cement board substrate (as specified in EN 13238: 2010) present.

Flame application time

The flame was applied for 15 seconds

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			Resin moulded board
Product reference			"MDE176G"
Name of manufacturer			Millboard
Colour			"Golden Oak"
Thickness			32mm (stated by sponsor) 32.42mm (determined by **Exova Warringtonfire**)
Weight per unit area			16.76kg/m² (determined by **Exova Warringtonfire**)
Moulded sheet	Resin	Product reference	**See Note 1 below**
		Generic type	Polyurethane
		Name of manufacturer	**See Note 1 below**
		Specific gravity/density	**See Note 1 below**
		Flame retardant details	**See Note 1 below**
	Glass reinforcement	Generic type	**See Note 1 below**
		Product reference	**See Note 1 below**
		Number of layers	**See Note 1 below**
		Weight per unit area of each layer	**See Note 1 below**
		Configuration of glass reinforcement	**See Note 1 below**
		Name of manufacturer	**See Note 1 below**
	Resin to glass ratio (by weight)		**See Note 1 below**
	Percentage glass reinforcement (by weight)		**See Note 1 below**
	Curing process (duration and temperature)		**See Note 1 below**
Brief description of manufacturing process			**See Note 1 below**

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

The description of the specimens as given above is not as detailed as would usually be the case for descriptions included in **Exova Warringtonfire** test reports and the description may not fully comply with the requirements of the test standard. In all other respects however the tests were conducted fully in accordance with the requirements of the test standard and the test results are valid**.**

Test Results

Number of specimens tested

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

Six specimens were tested, each of which were subjected to edge exposure to flame with the decorative 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 ± 0.9mm.

On the set of six specimens which were subject to edge application, the maximum flame height reached was observed to be 60 ± 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.

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.

Table 1

Test Flame Application Position - Surface Of The Decorative 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	0	None	None	8	8
2	No	Did not reach	0	None	None	18	10
3	No	Did not reach	0	None	None	8	8
4	No	Did not reach	0	None	None	22	12
5	No	Did not reach	0	None	None	30	12
6	No	Did not reach	0	None	None	26	10

Table 2

Test Flame Application Position - Edge Of The Decorative 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	Yes	Did not reach	50	None	None	25	23
2	Yes	Did not reach	40	None	None	27	25
3	Yes	Did not reach	40	None	None	21	27
4	Yes	Did not reach	40	None	None	24	22
5	Yes	Did not reach	40	None	None	24	24
6	Yes	Did not reach	60	None	None	30	32

Revision History

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

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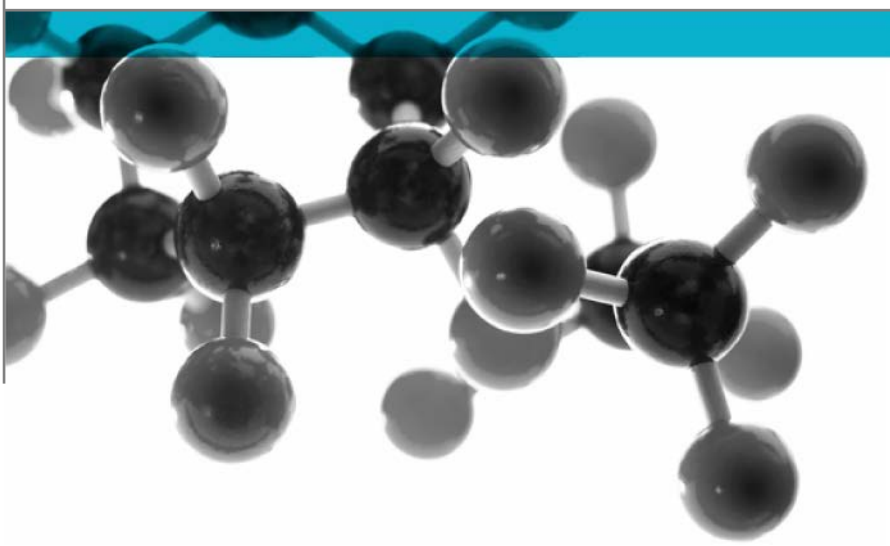
BS EN ISO 9239-1: 2010



Fire Tests For Determination Of The Burning Behaviour of Floorings
Part 1: Determination Of The Burning Behaviour Using A Radiant Heat Source

A Report To: The Millboard Company Limited

Document Reference: 371410

Date: 31st October2016

Issue No.: 1

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Executive Summary

Objective To determine the performance of the following product when tested in accordance with BS EN ISO 9239-1: 2010

Generic Description	Product reference	Thickness	Weight per unit area or density
Resin moulded board	"MDE176G"	32mm	16.76kg/m²*
Individual components used to manufacture composite:			
Resin	Unwilling to provide	Unwilling to provide	Unwilling to provide
Glass reinforcement	Unwilling to provide	Unwilling to provide	Unwilling to provide
***determined by Exova Warringtonfire**			
Please see page 6 of this test report for the full description of the product tested			

Test Sponsor The Millboard Company Limited, Ryton Lodge, Oxford Road, Ryton on Dunsmore, CV8 3EJ

Test Results:

Orientation of test specimens : 90° to production direction

Average critical radiant flux = 9.97kW/m²

Average smoke development = 148.35% min

Date of Test 6th October 2016

Signatories

Responsible Officer
C Jacques*
Technical Officer

Approved
T. Mort *
Senior Technical Officer

Authorised
S. Deeming *
Business Unit Head

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

Report Issued: 31st October 2016

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Test Details

Purpose of test

To determine the performance of specimens of a product when they are subjected to the conditions of the test procedure defined in the document BS EN ISO 9239-1:2010 - Reaction To Fire Tests For Floorings – Part 1: Determination Of The Burning Behaviour Using A Radiant Heat Source.

The test was performed in accordance with the procedure defined in BS EN ISO 9239-1:2010 and this report should be read in conjunction with that Standard.

Scope of test

BS EN ISO 9239-1:2010 describes a European test procedure for assessing the burning behaviour, spread of flame and smoke development of horizontally mounted floorcovering systems exposed to a radiant heat gradient in a test chamber, when ignited with a pilot flame.

The measurements provide a basis for estimating one aspect of fire exposure behaviour of floor covering systems. The imposed radiant flux simulates the thermal radiation levels likely to impinge on the floors of a building whose upper surfaces are heated by flames or hot gases or both, from a fire in an adjacent room or compartment.

This method is applicable to all types of floorcoverings such as textile carpet, cork, wood, rubber and plastic coverings as well as coatings. Results obtained by this method reflect the performance of the total floor covering system as tested. Modifications of the backing, bonding to a substrate, underlay, or other changes to the system may affect the test results.

The test is intended for regulatory purposes, specification acceptance, design purposes, classification, or development and research.

Fire test study group/EGOLF

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.

Instruction to test

The test was conducted on the 6th October 2016 at the request of The Millboard Company Limited, the sponsor of the test.

Test laboratory

The test was subcontracted to Exova Warringtonfire Gent, who hold ISO 17025 accreditation for this test method.

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.

Conditioning of specimens

The specimens were received on the 1st September 2016.Prior to test the specimens were conditioned to constant mass at a temperature of 23 ± 2°C and a relative humidity of 50 ± 5%.

Number of specimens tested

A total of four specimens were tested. Initial tests were carried out on one specimen in the production direction and one specimen in a direction perpendicular to that direction to establish the worse case condition. The results of these tests indicated that the worse case was with the specimens in a direction perpendicular to the production direction and the formal test was then completed with the specimens in that direction.

Exposed face

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

Substrate

The specimens were tested with an 8mm thick fibre cement board substrate (as specified in EN 13238: 2010) present.

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			Resin moulded board
Product reference			"MDE176G"
Name of manufacturer			Millboard
Colour			"Golden Oak"
Thickness			32mm (stated by sponsor) 32.42mm (determined by **Exova Warringtonfire**)
Weight per unit area			16.76kg/m² (determined by **Exova Warringtonfire**)
Moulded sheet	Resin	Product reference	**See Note 1 below**
		Generic type	Polyurethane
		Name of manufacturer	**See Note 1 below**
		Specific gravity/density	**See Note 1 below**
		Flame retardant details	**See Note 1 below**
	Glass reinforcement	Generic type	**See Note 1 below**
		Product reference	**See Note 1 below**
		Number of layers	**See Note 1 below**
		Weight per unit area of each layer	**See Note 1 below**
		Configuration of glass reinforcement	**See Note 1 below**
		Name of manufacturer	**See Note 1 below**
	Resin to glass ratio (by weight)		**See Note 1 below**
	Percentage glass reinforcement (by weight)		**See Note 1 below**
	Curing process (duration and temperature)		**See Note 1 below**
Brief description of manufacturing process			**See Note 1 below**

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

The description of the specimens as given above is not as detailed as would usually be the case for descriptions included in **Exova Warringtonfire** test reports and the description may not fully comply with the requirements of the test standard. In all other respects however the tests were conducted fully in accordance with the requirements of the test standard and the test results are valid**.**

Test Results

The test results relate to the behaviour of the test specimens of a product under the particular conditions of 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 distance between the flame front and the zero point at 10 minute intervals together with the observations recorded during the tests in respect of each specimen tested, are given in Table 1.

In accordance with the procedure defined in BS EN ISO 9239-1:2010: the following average results were obtained for the specimens cut at 90° to the production direction (→) :

Average maximum flame front distance	=	17cm
Average critical radiant flux	=	9.97kW/m^2
Average smoke development	=	148.35% min

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.

Table 1

SPECIMEN NO.	1	2	3	4
Orientation (Production direction (↑) or 90° to production direction (→))	↑	→	→	→
DISTANCE (cm)	**TIME TO TRAVEL TO INDICATED DISTANCE** (seconds)			
5	234	213	234	204
10	291	288	705	354
15	411	345		783
20		393		
25		450		
30				
35				
40				
45				
50				
55				
60				
65				
70				
75				
80				
85				
90				
95				
100				
Maximum flame front distance (cm)	15	25	12	15
Critical radiant flux (kW/m^2)	10.40	8.73	10.79	10.40
Smoke Development (%.min)	136.96	221.90	69.90	153.25

Specimen Number	1	2	3	4
Flame front distance at 10 min (cm)	15	25	5	10
Flame front distance at 20 min (cm)	15	25	12	15
Flame front distance at 30 min (cm)	15	25	12	15
Radiant flux at 10 minutes, Rf_{10} (kW/m^2)	10.40	8.73	≥11.0	10.72
Radiant flux at 20 minutes, Rf_{20} (kW/m^2)	10.40	8.73	10.79	10.40
Radiant flux at 30 minutes, Rf_{30} (kW/m^2)	10.40	8.73	10.79	10.40

Observations of the burning characteristics of the specimens during the testing exposure

None

Revision History

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

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