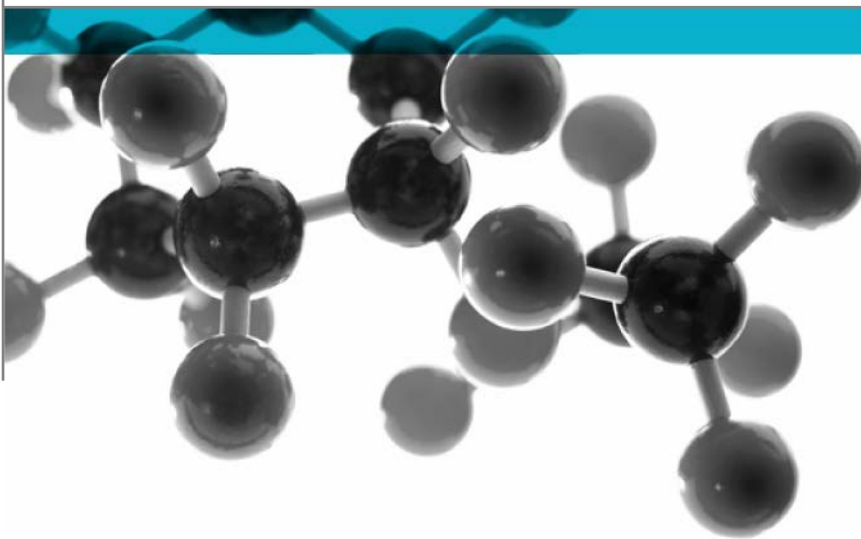


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# BS EN ISO 9239-1: 2010



## 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: Remmers (UK) Ltd

Document Reference: 403535

Date: 10<sup>th</sup> October 2018

Issue No.: 2

Page 1

Testing  
Advising  
Assuring



## 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
Epoxy resin coated fibre cement board	"QP Colour System"	14.14mm*	13.98kg/m <sup>3</sup>
<b>Individual components used to manufacture composite:</b>			
Epoxy resin	"QP Colour System"	1mm – 2mm	2 layers 0.3kg/m <sup>2</sup> & 0.6kg/m <sup>2</sup>
Fibre cement board substrate	Unable to provide	12mm	Unable to provide
<b>Please see page 6 of this test report for the full description of the product tested</b>			


**Test Sponsor** Remmers (UK) Ltd, Unit B1, The Fleming Centre, Fleming Way, Cranley, West Sussex, RH10 9NN


**Test Results:** **Orientation of test specimens : No direction**  
**Average critical radiant flux** = **≥11.0kW/m<sup>2</sup>**  
**Average smoke development** = **2.88% min**

**Date of Test** 20<sup>th</sup> September 2018

**Reason for revision** This document replaces issue 1 (dated 8<sup>th</sup> October 2018) of the same number which has been withdrawn. The incorrect product description table was added to the test reports this has now been amended in this issue 2 report..

## Signatories

  
 Responsible Officer  
 C. Jacques \*  
 Senior Technical Officer

  
 Authorised  
 T. Mort \*  
 Senior Technical Officer

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

Report Issued: 10<sup>th</sup> October 2018

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Author: C Jacques

Issue Date: 10<sup>th</sup> October 2018

Client: Remmers (UK) Ltd

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## Test Details

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<b>Purpose of test</b>	<p>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.</p> <p>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.</p>
<b>Scope of test</b>	<p>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.</p> <p>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.</p> <p>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.</p> <p>The test is intended for regulatory purposes, specification acceptance, design purposes, classification, or development and research.</p>
<b>Fire test study group/EGOLF</b>	<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>
<b>Instruction to test</b>	<p>The test was conducted on the 20<sup>th</sup> September 2018 at the request of Remmers (UK) Ltd, the sponsor of the test.</p>
<b>Provision of test specimens</b>	<p>The specimens were supplied by the sponsor of the test. <b>Exova Warringtonfire</b> was not involved in any selection or sampling procedure.</p>
<b>Conditioning of specimens</b>	<p>The specimens were received on the 14<sup>th</sup> August 2018</p> <p>Prior to test the specimens were conditioned to constant mass at a temperature of <math>23 \pm 2^{\circ}\text{C}</math> and a relative humidity of <math>50 \pm 5\%</math>.</p>

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<b>Number of specimens tested</b>	The specimens did not have a directional quality to them therefore a total of three specimens were tested.
<b>Exposed face</b>	The coated face of the specimens was exposed to the radiant heat of the test when the specimens were mounted in the test position.
<b>Substrate</b>	The specimens were tested without an additional substrate present.

## 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		Epoxy resin coated fibre cement board
Product reference		"QP Color System"
Name of manufacturer		Remmers
Overall thickness		14.14mm (determined by <b>Exova Warringtonfire</b> )
Overall weight per unit area		13.98kg/m <sup>2</sup> (determined by <b>Exova Warringtonfire</b> )
Coating	Generic type	Epoxy resin
	Product reference	"QP Color System"
	Name of manufacturer	Remmers
	Colour reference	"Grey"
	Number of coats	2
	Application rate per coat	0.3kg/m <sup>2</sup> 0.6kg/m <sup>2</sup>
	Application method	Epoxy Roller
	Flame retardant details	<b>See Note 1 Below</b>
Substrate	Generic type	Cement fibre board
	Product reference	<b>See Note 2 Below</b>
	Detailed description	<b>See Note 2 Below</b>
	Name of manufacturer	Gtec Hydropanel
	Thickness	12mm
	Weight per unit area	<b>See Note 2 Below</b>
	Colour reference	<b>See Note 2 Below</b>
	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.**

## Test Results

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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.

Average maximum flame front distance	=	≤5cm
Average critical radiant flux	=	≥11.0kW/m <sup>2</sup>
Average smoke development	=	2.88% 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.

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**Table 1**

SPECIMEN NO.	1	2	3
<b>DISTANCE (cm)</b>	<b>TIME TO TRAVEL TO INDICATED DISTANCE (seconds)</b>		
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
80			
85			
90			
95			
100			
Maximum flame front distance (cm)	≤5	≤5	≤5
Critical radiant flux (kW/m <sup>2</sup> )	≥11.0	≥11.0	≥11.0
Smoke Development (%.min)	1.07	4.31	3.24

<b>Specimen Number</b>	1	2	3
Flame front distance at 10 min (cm)	≤5	≤5	≤5
Flame front distance at 20 min (cm)	-	-	-
Flame front distance at 30 min (cm)	-	-	-
Radiant flux at 10 minutes, R <sub>f10</sub> (kW/m <sup>2</sup> )	≥11.0	≥11.0	≥11.0
Radiant flux at 20 minutes, R <sub>f20</sub> (kW/m <sup>2</sup> )	-	-	-
Radiant flux at 30 minutes, R <sub>f30</sub> (kW/m <sup>2</sup> )	-	-	-

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

None



## Revision History

Issue No : 2	Re-issue Date : 10 <sup>th</sup> October 2018
Revised By: C Jacques	Approved By: B Dean
Reason for Revision: This document replaces issue 1 (dated 8 <sup>th</sup> October 2018) of the same number which has been withdrawn. The incorrect product description table was added to the test reports this has now been amended in this issue 2 report.	

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