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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:

"Warmshell Graphite"

Report No:

WF 332289

Issue No:

1

Prepared for:

Lime Green Products Ltd
Coates Kiln
Stretton Road
Much Wenlock
TF13 6DG

Date:

22nd October 2013



1. Introduction

This classification report defines the classification assigned to “Warmshell Graphite”, an external wall insulation system, in line with the procedures given in EN 13501-1:2007+A1: 2009.

2. Details of classified product

2.1 General

The product, “Warmshell Graphite”, an external wall insulation system, is defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

2.2 Product description

The product, “Warmshell Graphite”, an external wall insulation system, is fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		External wall insulation system
Product reference of overall composite		“Warmshell Graphite”
Name of manufacturer of overall composite		Lime Green Products Ltd
Thickness of overall composite		200mm (stated by sponsor) 200mm (determined by Exova Warringtonfire)
Density of overall composite		163.65kg/m ³ (determined by Exova Warringtonfire)
Final coating product (test face)	Generic type	Water-based paint
	Product reference	“2 nd Coat Silicate Mineral Fine Waterglass Paint System <5% Organic”
	Name of manufacturer	Beecks
	Colour reference	“White”
	Number of coats	One
	Thickness	<0.5mm
	Application rate	1.4kg/l
	Application method	Brush
	Flame retardant details	See Note 1 below
	Curing process per coat	24 hours air drying
Third coating product	Generic type	Water-based paint
	Product reference	“1 st Coat Silicate Mineral Coarse Waterglass Paint System <5% Organic”
	Name of manufacturer	Beecks
	Colour reference	“White”
	Number of coats	One
	Thickness	<0.5mm
	Application rate	1.4kg/l
	Application method	Brush
	Flame retardant details	See Note 1 below
	Curing process per coat	24 hours air drying

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Second coating product	Generic type	Natural hydraulic lime based render system
	Product reference	"Lime Green Finish WP"
	Name of manufacturer	Lime Green Products
	Colour reference	"020"
	Number of coats	One
	Thickness	5mm
	Density	1450kg/m ³
	Application method	Rendering
	Curing process per coat	10 days air drying
	Flame retardant details	See Note 1 below
Fibre reinforcement	Generic type	Glass fibre mesh
	Product reference	"Lime Green Glass Fibre Mesh 660"
	Name of manufacturer	Vitrulan
	Colour reference	"Orange"
	Thickness	1-2mm
	Weight per unit area	146g/m ²
	Cell dimensions	6mm by 6mm
	Flame retardant details	See Note 1 below
First coating product	Generic type	Natural hydraulic lime based render system
	Product reference	"Lime Green Prepbond WP"
	Name of manufacturer	Lime Green
	Colour reference	See Note 2 below
	Number of coats	One
	Thickness	10mm
	Density	1350kg/m ³
	Application method	Rendering
	Curing process per coat	3-5 days air drying
	Flame retardant details	See Note 1 below
Insulation	Generic type	Expanded polystyrene
	Product reference	"Plustherm"
	Name of manufacturer	Styrene Packaging
	Colour reference	"Grey/Graphite"
	Thickness	180mm
	Density	285kg/m ³
	Flame retardant details	See Note 1 below
Fixing details (insulation to plywood)		Ejot STR-H fixings
Plywood	Generic type	Plywood
	Product reference	"Plywood"
	Name of manufacturer	See Note 2 below
	Thickness	8.50mm (determined by Exova Warringtonfire)
	Density	580-610kg/m ³
	Flame retardant details	See Note 1 below
Brief description of manufacturing process		See Note 2 below

Note 1 - The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the component.

Note 2 - The sponsor was unable to provide this information.



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	Lime Green Products Ltd	WF 332131	EN ISO 11925-2
Exova warringtonfire	Lime Green Products Ltd	WF 332130	EN 13823

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
EN ISO 11925-2 (30s exposure - surface)	F _s	6	Nil	Compliant
	Flaming droplets/ particles		None	Compliant
EN ISO 11925-2 (30s exposure - edge)	F _s	6	Nil	Compliant
	Flaming droplets/ particles		None	Compliant
EN ISO 11925-2 (30s exposure - edge at 90 degrees)	F _s	6	Nil	Compliant
	Flaming droplets/ particles		None	Compliant
EN 13823	FIGRA _{0.2MJ}	3	2.75	Compliant
	FIGRA _{0.4MJ}		2.75	Compliant
	THR _{600s}		0.88	Compliant
	LFS		None	Compliant
	SMOGRA		0.00	Compliant
	TSP _{600s}		11.51	Compliant

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with clause 8 of EN 13501-1:2007+A1:2009 and ETAG 004.

4.2 Classification

The product, "Warmshell Graphite", an external wall insulation system, in relation to its reaction to fire behaviour is classified:

B

The additional classification in relation to smoke production is:

s1

The additional classification in relation to flaming droplets / particles is:

d0

The format of the reaction to fire classification for construction applications, excluding flooring and linear pipe thermal insulation is:

Fire Behaviour		Smoke Production			Flaming Droplets	
B	-	s	1	,	d	0

i.e. **B – s1 , d0**

Reaction to fire classification: B – s1, d0

4.3 Field of application

This classification is valid for the following end use applications:

- i) Construction applications used over any substrate with a density equal to or greater than $680 \pm 50 \text{ kg/m}^3$, having a minimum thickness of 8mm and a fire performance of D-s2, d0 or better.

This classification is also valid for the following product parameters:

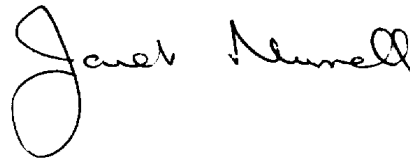
Fixing method	Mechanical fixings
Insulation product thickness	180 or lower
Insulation product density	285kg/m ³ or lower
Insulation product type	No variation allowed
Render thickness	Applied thickness or greater
Finishing coat	As tested, or with lower organic content
	In any colour
Reinforcement	Any reinforcement with a lower PCS value
Product composition	No variation allowed apart from specified above

SIGNED



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Matthew Dale
Certification Engineer
Technical Department

APPROVED



.....
Janet Murrell
Technical Manager
Technical Department
on behalf of **Exova warringtonfire**

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