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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:

Insulated Sprung Building
Wall Construction

Report No:

348466

Issue No:

2

Prepared for:

Sprung Instant Structures Ltd
80039 Maple Leaf Rd E
Aldersyde
Alberta
Canada
T0L 0A0

Date: 4th April 2016

UKAS TESTING
0249

1. Introduction

This classification report defines the classification assigned to “Insulated Sprung Building Wall Construction”, PVC architectural fabrics stretched between aluminium beams with a foil faced fibreglass blanket insulation filling the cavity based insulated wall system, in line with the procedures given in EN 13501-1:2007+A1: 2009.

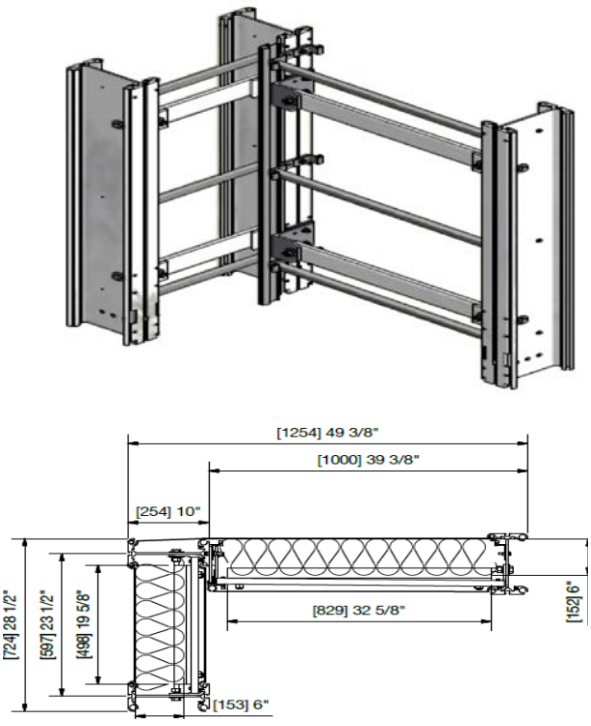
2. Details of classified product

2.1 General

The products, “Insulated Sprung Building Wall Construction”, PVC architectural fabrics stretched between aluminium beams with a foil faced fibreglass blanket insulation filling the cavity based insulated wall system, are defined as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

2.2 Product description

The product, “Insulated Sprung Building Wall Construction”, PVC architectural fabrics stretched between aluminium beams with a foil faced fibreglass blanket insulation filling the cavity based insulated wall system, are fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description	PVC architectural fabrics stretched between aluminium beams with a foil faced fibreglass blanket insulation filling the cavity
Product reference of composite	”Insulated Tensioned Membrane Structure Assembly”
Overall thickness of composite	254mm (stated by sponsor)
Diagram of system	

Exterior fabric type 1	Tedlar coating (test face)	Product reference	"Tedlar" (top coat)
		Generic type	Polyvinyl fluoride film
		Name of manufacturer	DuPont (applied by Seaman Corp)
		Number of coats	1
		Application rate	60 g/m^2
		Application method	**See Note 1 below**
		Colour reference	"Desert Tan"
		Flame retardant details	**See Note 1 below**
	PVC membrane (Internal)	Product reference	"Adhesive Coated Fabric"
		Generic type	PVC on polyester fabric base
		Name of manufacturer	Seaman Corporation
		Thickness	0.81 mm
		Weight per unit area	680 g/m^2
		Trade name of flame retardant	**See Note 1 below**
		Generic type of flame retardant	Antimony trioxide
		Amount of flame retardant	5-10% of PVC coating
	Coating (reverse face)	Product reference	"Back Coat"
		Generic type	PVC
		Name of manufacturer	Seaman Corporation
		Number of coats	2
		Application rate per coat	180 g/m^2
		Application method	Calendering
		Colour	1st coat "Black", 2nd coat "White"
		Trade name of flame retardant	**See Note 1 below**
		Generic type of flame retardant	Antimony trioxide
		Amount of flame retardant	5-10%
Exterior fabric type 2	ECM Coating (test face)	Product reference	"ECM Lacquer"
		Generic type	"ECM Lacquer" The sponsor could not provide any further information
		Name of manufacturer	Heesung Polymer
		Number of coats	1
		Application rate	**See Note 1 below**
		Application method	Coating
		Colour reference	"Transparent"
		Flame retardant details	**See Note 2 below**
	ECM / PVC membrane (internal)	Product reference	"ECM 1821 800g/m^2"
		Generic type	PVC coated fabric
		Name of manufacturer	Heesung Polymer
		Thickness	0.58mm
		Weight per unit area	680g/m^2
		Colour reference	"Tan"
		Trade name of flame retardant	**See Note 2 below**
		Generic type of flame retardant	Sodium Trioxide, Magnesium Hydroxide, Aluminium Hydroxide
		Amount of flame retardant	16%

Exterior fabric type 3	Rainkleen Coating (test face)	Product reference	"RainKleen Acrylic Top Coat"
		Generic type	Acrylic liquid top coat
		Name of manufacturer	Herculite Products
		Number of coats	1
		Application rate	**See Note 1 below**
		Application method	Gravure roll application
		Colour reference	"Clear"
		Flame retardant details	**See Note 2 below**
	Polyester membrane (internal)	Product reference	"Tan Polyester 18 x 14 1000d Weft Inserted Scrim"
		Generic type	Polyester scrim
		Name of manufacturer	Herculite Products
		Thickness	0.67mm
		Weight per unit area	625g/m^2
		Colour reference	"Tan"
		Flame retardant details	**See Note 2 below**
Exterior fabric type 4	Herculite PVC membrane (internal)	Product reference	"Herculite White Liner BK 1 - PVC Calendared film"
		Generic type	PVC film
		Name of manufacturer	Herculite Products
		Thickness	0.40 mm
		Weight per unit area	397 g/m^2
		Colour reference	"White"
		Trade name of flame retardant	**See Note 1 below**
		Generic type of flame retardant	Antimony Trioxide/Phosphate plasticizer
		Amount of flame retardant	**See Note 1 below**
Insulation		Product reference	"Microlite L Blanket™"
		Generic type	Foil faced glass fibre
		Name of manufacturer	John Manville
		Density	8-9.6kg/m^3
		Thickness	203mm
		Flame retardant details	**See Note 2 below**
PVC membrane (external)		Product reference	"Herculite Liner BK 1 - PVC Calendared film"
		Generic type	PVC film
		Name of manufacturer	Herculite Products
		Thickness	0.40 mm
		Weight per unit area	397 g/m^2
		Colour reference	"White"
		Trade name of flame retardant	**See Note 1 below**
		Generic type of flame retardant	Antimony Trioxide/Phosphate plasticizer
		Amount of flame retardant	**See Note 1 below**
Brief description of manufacturing process			Lamination process using heat, pressure and tension to adhere multiple layers together into a structure fabric.

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.**

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	Sprung's Western Tent & Awning Ltd	WF 348353	EN ISO 11925-2
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348348	EN 13823
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348354	EN ISO 11925-2
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348349	EN 13823
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348355	EN ISO 11925-2
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348352	EN 13823
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348356	EN ISO 11925-2
Exova Warringtonfire	Sprung's Western Tent & Awning Ltd	WF 348358	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	100	Compliant
		Flaming droplets/ particles		None	Compliant
	30s exposure – edge	F_s	6	130	Compliant
		Flaming droplets/ particles		None	Compliant
	30s exposure Edge Of Specimen Turned At 90° Round Its Vertical Axis Foam Face Exposed.	F_s	6	Nil	Compliant
		Flaming droplets/ particles		None	Compliant
EN 13823		$FIGRA_{0.2MJ}$	3	52.53 – 302.07	Compliant
		$FIGRA_{0.4MJ}$		22.10 – 220.68	Compliant
		THR_{600s}		2.33 – 4.92	Compliant
		LFS		None	Compliant
		SMOGRA		189.11 – 425.04	Compliant
		TSP_{600s}		233.94 – 460.74	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.

4.2 Classification

The product, “Insulated Sprung Building Wall Construction”, PVC architectural fabrics stretched between aluminium beams with a foil faced fibreglass blanket insulation filling the cavity based insulated wall system in relation to their reaction to fire behaviour are classified:

C

The additional classification in relation to smoke production is:

s3

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

d0

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

Fire Behaviour		Smoke Production			Flaming Droplets	
C	-	s	3	,	d	0

i.e. C – s3 , d0

Reaction to fire classification: C – s3, d0

4.3 Field of application

This classification is valid for the following end use applications:

i) Construction applications mechanically installed without the presence of a substrate and with an air gap.
ii) Construction applications up to 18m high. Construction applications over this height are not covered by this report.

This classification is also valid for the following product parameters:

Product thickness	No variation allowed
Product colour / pattern (exposed face)	Any
Product colour / pattern (reverse face)	Any
Insulation thickness	No variation allowed
Insulation density	No variation allowed
Product construction	No variation allowed

5. Limitations

This document does not represent type approval or certification of the product.

SIGNED

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Janet Murrell
Technical Manager
Technical Department

APPROVED

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Matthew Dale
Certification Engineer
Technical Department
on behalf of **Exova Warringtonfire**

Issue 2 – 6th April 2016