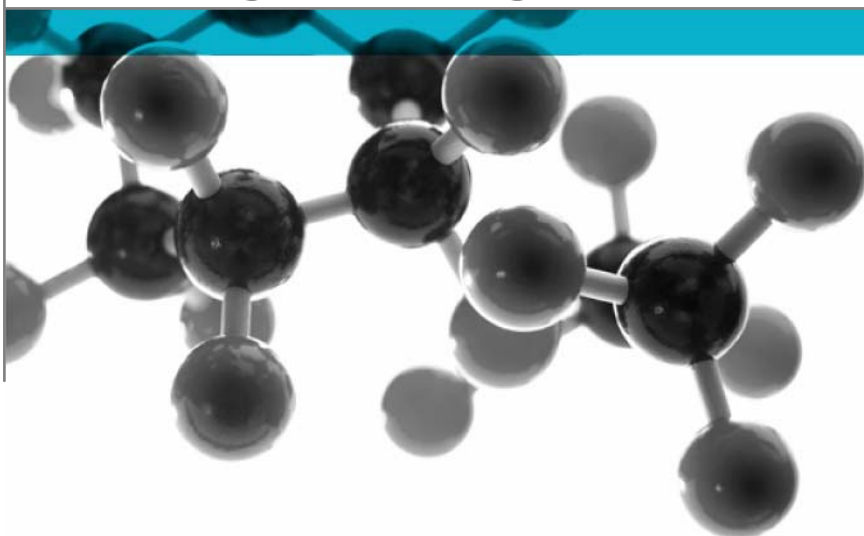


Ad-hoc investigation to determine the fire extinguishing properties of an “AST PyroSticker” fire extinguishing device



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A Report To: ACASIA Commercial L.L.C

Document Reference: 342704

Date: 4th August 2014

Issue No.: 1

Page 1

**Testing
Advising
Assuring**

Executive Summary

Objective To demonstrate the capability of the following fire extinguishing device to extinguish a fire.


Generic Description	Product reference	Thickness or dimensions	Weight per unit area
Micro-extinguisher made from polyacrylyc polymer with mineral particles	"AST PyroSticker"	85mm x 45mm x 2mm	0.26-0.39g/cm ²
Individual components used to manufacture composite:			
Face	"AST Fire Extinguishing Composite Material"	2-3mm	0.26-0.39g/cm ²
Adhesive	"Tesa Glue Layer"	0.05mm	0.1kg/m ²
Please see page 5 of this test report for the full description of the product tested and cabinet used			


Test Sponsor ACASIA Commercial L.L.C, Opp Al Nasr Club Oud Metha Dubai United Arab Emirates, Office 503 Business Venue Building, Dubai 00971, United Arab Emirates

Test Results: The test has demonstrated the ability of the fire extinguishing device to extinguish an internal fire within a model DB (distribution board) box of dimensions 395mm (high) x 310mm (wide) x 125mm (deep) with polycarbonate window

Date of Test 18th July 2014

Signatories


Responsible Officer
T. Kinder *
Technical Officer


Authorised
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Senior Technical Officer

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

Report Issued: 4th August 2014

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Test Details

Introduction	<p>The sponsor approached Exova Warringtonfire with a micro-extinguisher and requested that a test be performed within a model DB (distribution board) box to demonstrate its capability to extinguish a fire.</p> <p>As there is not a specific standard or test procedure for this type of test, the sponsor and Exova Warringtonfire agreed to the test procedure detailed in this report.</p>
Purpose of test	<p>Ad-hoc investigation to determine the fire extinguishing properties of an "AST PyroSticker" fire extinguishing device within a model DB (distribution board) box utilising a Heptane fire source.</p>
Instruction to test	<p>The test was conducted on the 18th July 2014 at the request of ACASIA Commercial L.L.C, the sponsor of the test.</p>
Provision of test specimens	<p>The specimen was supplied by the sponsor of the test on the 30th June 2014. Exova Warringtonfire was not involved in any selection or sampling procedure.</p>
Test procedure	<p>As there is no specific standard or test procedure for testing this type of product. The sponsor and Exova Warringtonfire agreed that the following test procedure was considered to best demonstrate the ability of a fire extinguishing device to extinguish an internal fire within a model DB (distribution board) box of dimensions 395mm (high) x 310mm (wide) x 125mm (deep) with polycarbonate window.</p> <ul style="list-style-type: none">• A model DB (distribution board) box of dimensions 395mm (high) x 310mm (wide) x 125mm (deep) with polycarbonate window was used as the test enclosure.• A fire source comprising a cup full of water with a 10mm thick layer of heptane was placed in the centre of the model DB (distribution board) box at a distance of 200mm ± 10mm between the top of the cup and the horizontal prone surface.• The heptane was ignited and observations were made to determine if:<ol style="list-style-type: none">a) The fire source was extinguished within 60 seconds from the start of the test.b) There was no re-ignition within 3 minutes after the fire was extinguished.• The test was discontinued following a period of 3 minutes after extinguishment.• Still photographs and a video recording were taken of the test.

Description of Test Specimen and Cabinet

The descriptions of the specimens and cabinet given below have been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

Test Specimen

General description		Micro-extinguisher made from polyacrylic polymer with mineral particles
Product reference		"AST PyroSticker"
Name of manufacturer		PyroChemika, LLC, Moscow Russia
Detailed description		Micro-extinguisher AST - new fire extinguishing device, developed especially for protection against inflammations in small-sized objects such as electric switchboards, distribution boards, safes, etc. Micro-extinguisher AST works as intellectual fire extinguishing system. Changes in temperature influence its active components that lead to instant reaction and emission of strong burning inhibitors, up to full suppression of seat of fire.
Overall dimensions		85mm x 45mm x 2mm (stated by sponsor) 85.02mm x 45.51mm x 1.84mm (determined by Exova Warringtonfire)
Overall weight per unit area		0.26-0.39g/cm ² (stated by sponsor) 0.28g/cm ² (determined by Exova Warringtonfire)
Product Configuration		Thin and flexible plates with glue layer
Face	Trade name	"AST Fire Extinguishing Composite Material"
	Generic type	Polyacrylic polymer with mineral particles
	Name of manufacturer	PyroChemika, LLC, Russia
	Weight per unit area	0.26-0.39g/cm ²
	Thickness	2-3mm
	Colour	"Red, Orange, Yellow"
	Trade name of flame retardant	"1,1,1,2,3,3,3-Heptafluoropropane,HFC-227ea"
	Generic type of flame retardant	Hydro fluorocarbon (HFC)
	Amount of flame retardant	50% by weight
Adhesive	Product reference	"Tesa Glue Layer"
	General description	Glue See Note 1 below
	Name of manufacturer	Tesa SE
	Thickness	0.05mm
	Weight per unit area	0.1kg/m ²
	Flame retardant details	See Note 2 below
Brief description of manufacturing process		The micro-extinguisher should be installed in the middle or directly over contact group in the top of object with an active layer downwards. - Prepare a surface for micro-extinguisher installation. The surface must be clean, dry and degreased. -Remove a protective film from adhesive layer of micro-extinguisher. -Press the micro-extinguisher to the prepared surface with adhesive layer and hold for several seconds.

Cabinet

General description		General purpose model DB (distribution board) box
Product reference		“SCHRN-24”
Name of manufacturer		ELMA,OSC, St.Petersburg, Russia
Dimensions		395mm (high) x 310mm (wide) x 125mm (deep)
Coating	Product reference	See Note 1 below
	Generic type	Alkyd paint
	Name of manufacturer	See Note 1 below
	Specific gravity	See Note 1 below
	Application thickness	0.05mm
	Colour	“Grey”
	Flame retardant details	See Note 2 below
Steel	Product reference	“SCHRN”
	General description	Metal DB (distribution board) box with a door and a locker
	Generic type	Steel
	Name of manufacturer	ELMA, St.Petersburg, Russia
	Thickness	See Note 1 below
	Weight per unit area / density	See Note 1 below
Flame retardant details	The component is inherently flame retardant	
Window	Product reference	See Note 1 below
	Generic type	Polycarbonate
	Name of manufacturer	See Note 1 below
	Thickness	4mm
	Weight per unit area / density	See Note 1 below
	Colour	“Transparent”
Flame retardant details	See Note 2 below	
Brief description of manufacturing process		See Note 1 below

Note 1. The sponsor was unable to provide this, or further 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

Observations

The visual observations taken during the tests are shown in Appendix 1.

Photographs taken at intervals during the test are shown on page 10.

Discussion of results

The test has demonstrated the ability of the fire extinguishing device to extinguish an internal fire within a model DB (distribution board) box of dimensions 395mm (high) x 310mm (wide) x 125mm (deep) with polycarbonate window.

Applicability of test results

The test results relate only to the behaviour of the test specimen of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the performance of the product in its end use.

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.

Appendix 1 - Observations

Observations during test of Specimen 1

00:01 Test start, fire source ignited.
00:32 All flaming ceased.
03:32 Test terminated, no re-ignition.

Observations during test of Specimen 2

00:01 Test start, fire source ignited.
00:46 All flaming ceased.
03:46 Test terminated, no re-ignition.

Observations during test of Specimen 3

00:01 Test start, fire source ignited.
00:48 All flaming ceased.
03:48 Test terminated, no re-ignition.

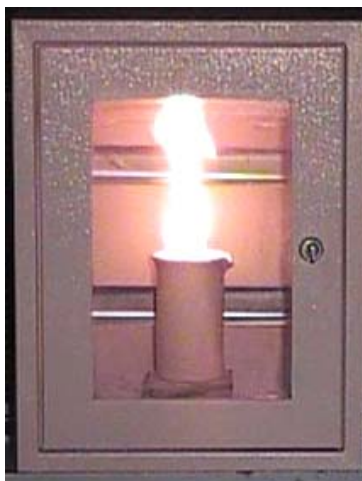
Photographs



**Photograph of "AST PyroSticker"
in position before test**



Photograph at the start of the test



Photograph during the test



Photograph after the test

Revision History

Issue No :	Issue Date:
Revised By:	Approved By:
Reason for Revision:	

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