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UL-94



Horizontal Burning Test For Classifying Materials HB

A Report To: Pineapple Contracts

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Date: 11th June 2015

Issue No.: 1

Page 1

Testing
Advising
Assuring



Executive Summary

Objective To determine the performance of the following material when tested in accordance with Section 7 - "Horizontal Burning Test for Classifying materials HB" of UL94 - 'Test for Flammability of Plastics Materials for Parts in Devices and Appliances'.


Generic Description	Product reference	Thickness	Density
Polyethylene	"Icorene® 3560"	8.04mm*	0.935g/cm ³
*determined by Exova Warringtonfire			
Please see page 5 of this test report for the full description of the product tested			


Test Sponsor Pineapple Contracts, Murray Road, Orpington, Kent, BR5 3QY

Test Results: **When the test results are assessed using the test criteria specified in the Standard, the material, when tested at a nominal thickness of 8mm, is classified as "HB".**

Date of Test 8th June 2015

Signatories


 Responsible Officer
 C. Jacques *
 Technical Officer


 Authorised
 T. Mort *
 Senior Technical Officer

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

Report Issued: 11th June 2015

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Test Details

Purpose of test	<p>To determine the flammability of a plastics material when it is tested in accordance with the test procedure specified in Section 7 - "Horizontal Burning Test for Classifying materials HB" of UL94 - 'Test for Flammability of Plastics Materials for Parts in Devices and Appliances'.</p> <p>Each specimen was tested in accordance with the test method specified in the Standard, the gas supplied to the Bunsen burner being methane. This report should be read in conjunction with Section 7 of UL94.</p>
Scope of test	<p>The requirements of UL94 cover plastics materials and are intended to serve as a preliminary indication of their suitability with respect to flammability for a particular application. The requirements may be applied to other non-metallic materials, if found to be appropriate.</p> <p>The final acceptance of a material by the Underwriter's Laboratories Inc. is dependant upon its use in complete equipment which conforms with the Standards applicable to such equipment.</p>
Fire test study group/EGOLF	<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>
Instruction to test	<p>The test was conducted on the 8th June 2015 at the request of Pineapple Contracts, the sponsor of the test.</p>
Provision of test specimens	<p>The specimens were supplied by the sponsor of the test. Exova Warringtonfire was not involved in any selection or sampling procedure.</p>
Conditioning of specimens	<p>The specimens were received on the 4th June 2015.</p> <p>Three specimens were conditioned for at least 48 hours at a temperature of 23 ± 2°C and a relative humidity of 50 ± 5% prior to testing.</p>

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.

Generic type	Polyethylene
Product reference	"Icorene® 3560"
Name of manufacturer	See Note 1 Below
Thickness	8.04mm (determined by Exova Warringtonfire)
Density	0.935g/cm ³ (stated by sponsor) 1.54g/cm ³ (determined by Exova Warringtonfire)
Colour reference	"Orange" (Observed by Exova Warringtonfire)
Flame retardant details	See Note 2 Below
Brief description of manufacturing process	See Note 2 Below

Note 1: The sponsor of the test has provided this information but at the specific request of the sponsor, these details have been omitted from the report and are instead held on the confidential file relating to this investigation.

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

Test Results

Results

The following results were obtained for each of the specimens tested.

Specimen Number	Time for flame front to reach 25mm mark (Seconds)	Time for flame front to reach 100mm mark (Seconds)	If 100mm mark not reached		Burning Rate (mm/minute)
			Time for flaming to cease (Seconds)	Distance Flame reached from test edge (mm)	
1	121	499	Not Applicable	Not Applicable	11.90
2	104	384	Not Applicable	Not Applicable	16.07
3	116	630	Not Applicable	Not Applicable	8.75

Conclusion

UL94 states that a material classed HB shall:

- (a) Not have a burning rate exceeding 40mm per minute over a 75mm span for specimens having a thickness of 3.0-13.0mm, or
- (b) Not have a burning rate exceeding 75mm per minute over a 75mm span for specimens having a thickness less than 3.0mm, or
- (c) Cease to burn before the 100mm reference mark.

When the test results are assessed using the test criteria specified in the Standard, the material, when tested at a nominal thickness of 8mm, is classified as "HB".

Applicability of test results

The test results relate only to the behaviour of the test specimens of the 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.

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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Revision History

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