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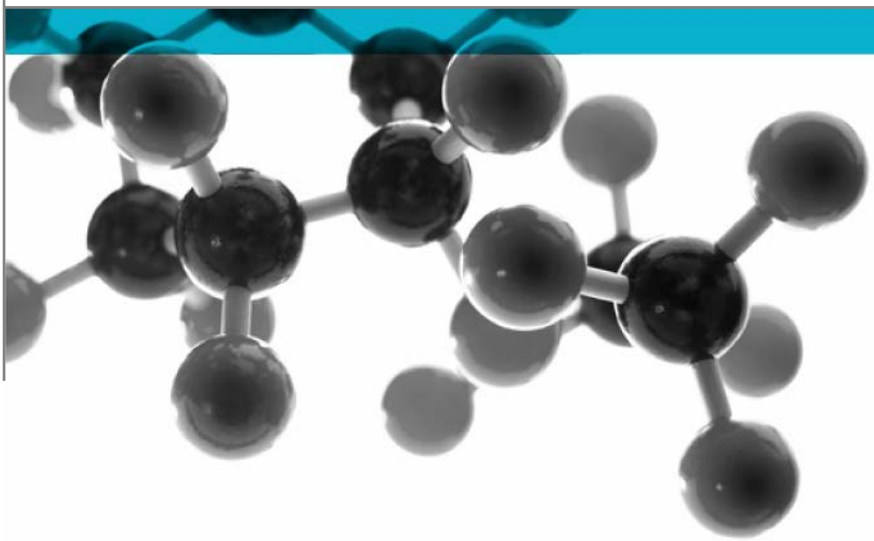
EN 45545-2: 2013+A1:2015



Summary Test Report – Requirement Table 5 (R22 & R23)

Test Method References "T01" (EN ISO 4589-2: 2017. Determination of burning behaviour by oxygen index Part 2: Ambient temperature test), "T10.03" (ISO 5659-2: 2017; Plastics – Smoke Generation. Part 2 Determination of Optical Density by a Single Chamber Method) and "T12" (NF X70-100-1: 2006, NF X70-100-2: 2006 Gas analysis)

A Report To: Leyland Hose & Silicone Services

Document Reference: 438692

Date: 9th April 2021

Issue No.: 1

Executive Summary

Objective

To assess the results of tests performed in accordance with methods T01, T10.03 and T12 as defined in EN 45545-2: 2013+A1:2015 at an irradiance level of 25kW/m^2 with a pilot flame, on specimens of a product and to provide an opinion of compliance with the requirements, as defined in EN 45545-2: 2013+A1:2015.

Generic Description	Product reference	Thickness	Density
Flame retardant grade silicone	"LHSS-LSLT Grey"	6mm	1.25 – 1.4g/cm^3
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor

Leyland Hose & Silicone Services, Unit 3 Centurion Court, Leyland, Lancashire PR25 3UQ

Opinion

We consider the results of the tests confirmed in reports referenced 438689, 438690 & 438691 to the test methods detailed above demonstrate that the product, as tested, complies with requirements R22 (detailed in Table 5 of EN 45545-2: 2013+A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

We consider the results of the tests confirmed in reports referenced 438689, 438690 & 438691 to the test methods detailed above demonstrate that the product, as tested, complies with requirements R23 (detailed in Table 5 of EN 45545-2: 2013+A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

Signatories

Responsible Officer K. Deluce * Testing Officer	Authorised J. Lucas-Cox * Operations Manager

* For and on behalf of Warringtonfire.

Report Issued: 9th April 2021

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Test Details

Terms Of Reference

To assess the results of tests performed in accordance with methods T01, T10.03 and T12 as defined in EN 45545-2: 2013+A1:2015 at an irradiance level of 25kW/m^2 with a pilot flame, on specimens of a product and to provide an opinion of compliance with the requirements, as defined in EN 45545-2: 2013+A1:2015.

Introduction

Specimens of a product have been tested in accordance with the test methods "T01" (EN ISO 4589-2: 2017 Determination of burning behaviour by oxygen index Part 2: Ambient temperature test), "T10.03" (ISO 5659-2: 2017; Plastics – Smoke Generation. Part 2 Determination of Optical Density by a Single Chamber Method) and "T12" (NF X70-100-1: 2006, NF X70-100-2: 2006 Gas analysis)". The results of the tests are fully reported in the Warringtonfire test reports No's. 438689, 438690 & 438691.

This summary report has been prepared at the request of the sponsor and relates the results of the tests to the requirements for R22 and R23, as defined in Table 5 of EN 45545-2: 2013+A1:2015.

This summary should be read in conjunction with, and not accepted as a substitute for the Warringtonfire test reports No's. 438689, 438690 & 438691. Those test reports may include additional information which may be relevant to the assessment of the potential fire hazard of the product. Where this assessment covers a system used on European rolling stock covered by the Technical Specification for Interoperability (LOC&PAS TSI (Commission Regulation (EU) No. 1302/2014)) all tests must have been conducted within the last 5 years or the test reports must have been reviewed within the last five years.

Face subjected to tests

The specimens were mounted in the test positions such that the one of two identical faces were exposed to the heating conditions of the tests.

Results of test

The following results were obtained for the specimens, which were tested.

"T01" EN ISO 4589-2: 2017

Oxygen index = 40.1 ±0.54%

"T10.03" ISO 5659-2: 2017

D_s max = 70

"T12" NFX 70-100-1: 2006 Gas Analysis

CIT_{NLP} = 0.03

Applicability of test results

The test results relate only to the behaviour of the test specimens of the product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential 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 will therefore invalidate the test results. It is the responsibility of the supplier of the product to ensure that the product which is supplied is identical with the specimens which were tested.

Description of Test Specimens

The description of the specimens given below has been prepared from information provided by the sponsor of the test. This information has not been independently verified by Warringtonfire**.** All values quoted are nominal, unless tolerances are given.

Generic type	Flame retardant grade silicone
Product reference	"LHSS-LSLT Grey"
Detailed description	Flame retardant silicone compound
Name of manufacturer	Dow Corning
Thickness	6mm (stated by sponsor) 6.03mm (determined by Warringtonfire)
Density	1.25 – 1.4g/cm³ (stated by sponsor) 1.44g/cm³ (determined by Warringtonfire)
Colour	Grey
Trade name of flame retardant	"RBM-Modifier"
Generic type of flame retardant	Mineral flame retardant
Amount of flame retardant	2.0 – 20pph
Brief description of manufacturing process	Hand built hoses from calendered, fabric reinforced silicone

Classification

Opinion

We consider the results of the tests confirmed in reports referenced 438689, 438690 & 438691 to the test methods detailed above demonstrate that the product, as tested, complies with requirements R22 (detailed in Table 5 of EN 45545-2: 2013+A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

We consider the results of the tests confirmed in reports referenced 438689, 438690 & 438691 to the test methods detailed above demonstrate that the product, as tested, complies with requirements R23 (detailed in Table 5 of EN 45545-2: 2013+A1:2015) for a HL1, HL2 and HL3 Hazard Level Classification.

Validity of opinion

This opinion is based on the requirements of EN 45545-2:2013+A1:2015 at the date of this report. If EN 45545-2+A1:2015 is revised or amended in any way subsequent to that date, care must be taken to ensure that this opinion is not invalidated by those revisions or amendments.

The opinion has been formulated on the assumption that the specimens are representative of the product in practice. Warringtonfire was not involved in any sampling or selection procedures which would confirm this or in any audit testing which would provide confidence in the consistency of the product in the tests.

Revision History

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

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