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Test Report: ICL/H22/15293

EN 17084:2018

**Railway applications – Fire protection on railway
vehicles – Toxicity test of materials and components**

Test Method 2 Tube Furnace (NFX 70-100-2)

Sponsored By

Sleeve It Limited.

Unit 36 Dolly waggon Way,
South Rings, Bamber Bridge, Preston, Lancashire, PR5 6EW.

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1 Introduction

Tests were undertaken at the request of the sponsor on a specimen of a polymeric material. The test was conducted in accordance with the procedures specified in EN 17084:2018 Method 2.

EN 17084:2018 Method 2. details a test procedure, the results being expressed as CIT value, for the measurement of toxic fumes generated under the conditions of test carried out in apparatus detailed in NFX 70-100 -2

The test method provides a means for the comparative assessment of products, however, it does not model a real fire situation and the results cannot therefore be used to describe the fire hazard of materials under actual fire conditions.

2 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.

The product was a 3.4mm thick red silicone coated glass fibre sleeving

The sponsor of the test did not provide further details relating to the composition of the material.

3 Conditioning Of Specimens

The specimens were received on 22nd June 2022.

The specimens were conditioned to constant mass at $23 \pm 2^{\circ}\text{C}$ and $50 \pm 5\%$ RH, before testing.

4 Date Of Test

The tests were performed on 21st July 2022.

5 Test Procedure

The tests were carried out in accordance with the procedures specified in EN 17084:2018 Method 2. and this report should be read in conjunction with this standard.

The method consists in burning of 1g of the sample in a tubular furnace raised to a specified temperature (600°C) and absorbing evolved gases in solutions or in sampling bags (for CO & CO₂). During the test, air is passing through the tube with a steady flow of 2 l/m. The sampling bags and solutions are analysed later.

Test was performed in accordance with the procedure specified in NFX 70-100.

The following methods were used for gas analysis:

CO and CO₂: NDIR;

HCl , HBr , NO_x , SO₂ and HF : Ionic chromatography

HCN: Colorimetry

6 Test Results

The test results apply to the sample as received tested after conditioning. The test results relate only to the behaviour of the specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential toxicity 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. Uncertainty measurement has not been taken into account when presenting the test results.

	CO ₂	CO	SO ₂	HBr	HCl	HCN	NO _x	HF
Run 1	277.20	5.04	0.00	0.00	0.03	0.07	0.00	0.00
Run 2	275.04	5.95	0.00	0.00	0.05	0.08	0.00	0.00
Run 3	282.96	4.12	0.00	0.00	0.02	0.00	0.00	0.00
Average	278.40	5.04	0.00	0.00	0.03	0.05	0.00	0.00

CIT_{NPL} calculation

GAS	CONCENTRATION	REFERENCE	CIT _{Npl}
	mg/g	VALUES	VALUE
CARBON DIOXIDE	278.40	72000	0.004
CARBON MONOXIDE	5.04	1380	0.004
SULPHUR DIOXIDE	0.00	262	0.000
HYDROGEN BROMIDE	0.00	99	0.000
HYDROGEN CHOLORIDE	0.03	75	0.000
HYDROGEN CYANIDE	0.05	55	0.001
NITROGEN OXIDES	0.00	38	0.000
HYDROGEN FLOURIDE	0.00	25	0.000
		CIT (NLP)	0.009

7 Conclusion

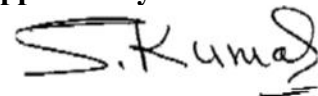
When tested in accordance with the procedure called un EN 45545-2 Annex C Clause C.12 Test method 2 the sheet product satisfies the toxicity requirements of the standard given in Table 5 For R22 HL1, HL2 and HL3

Prepared by



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Approved by



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Annex 1 (Informative)

The following requirements are given in Table 5 of EN 45545-2 for R22

Test method reference	Parameter	Requirements for R22		
		Values are maximum allowed		
		HL1	HL2	HL3
T12 EN 17084 Method 2 600 °C or T11.02 EN 17084 Method 1 25 kWm-2	CIT _{NPL} dimensionless	1.2	0.9	0.75

The following requirements are given in Table 5 of EN 45545-2 for R23

Test method reference	Parameter	Requirements for R23		
		Values are maximum allowed		
		HL1	HL2	HL3
T12 EN 17084 Method 2 600 °C or T11.02 EN 17084 Method 1 25 kWm-2	CIT _{NPL} dimensionless	-	1.8	1.5