

16/07 '08 WED 10:07 FAX 023 9233 5592

QINETIQ FIRE R&C

013

Report HAH421

COMMERCIAL-IN-CONFIDENCE

Summary

The sample of McGeoch LED light fitting heat sink material, submitted for testing in accordance with BS 6853: 1999, has achieved the following results:-

Test Method	Parameter	Test Result
BS 476 Part 6 – Fire propagation	i_1 (max)	0.00
	l (max)	0.00
BS 476 Part 7	Surface spread of flame	Class 1
Annex D.8.4 - Panel test	A_0 (ON)	0.1
	A_0 (OFF)	0.1
Annex B Area based toxic fume	R (max)	$R = 0.2$

The criteria for interior surfaces, as detailed in the specification are:

Test Method	Parameter	Vehicle Category		
		la	lb	II
BS 476 Part 6 – Fire propagation	i_1 (max)	6	6	nc
	l (max)	12	12	nc
BS 476 Part 7 – Spread of flame	Vertical and horizontal prone surfaces	Class 1	Class 1	Class 1
Annex D.8.4 - Panel test	A_0 (ON)	2.6	4.2	9.4
	A_0 (OFF)	3.9	6.3	14.0
Annex B Area based toxic fume	R (max) for vertical and horizontal prone surfaces	1.0	1.6	3.6

where the definitions of category are:

- Category I: Underground
- Category II: Surface
- nc: no criterion

Therefore the material meets the requirements of vehicle category la for vertical surfaces, with respect to the tests performed.

"These tests alone do not assess the fire hazard of the material, or a product made from this material, under actual fire conditions. Consequently, the results of these tests shall not be quoted in support of claims with respect to the fire hazard of the material or product under actual fire conditions. The results when used alone should only be used for research and development, quality control and material specifications."

16/07 '08 WED 10:09 FAX 023 9233 5592

QINETIQ FIRE R&C

023

Report HAH430

COMMERCIAL-IN-CONFIDENCE

Summary

The sample of McGeoch LED light fitting PCB material, submitted for testing in accordance with BS 6853: 1999, has achieved the following results:-

Test Method	Parameter	Test Result
BS EN ISO 4589-3: Annex A	Flammability temperature (FT)	> 400 °C
Annex D.8.4 – Small-scale test	A ₀ (max)	0.004
Annex B Area based toxic fume	R (max)	R = 0.3

The criteria for interior surfaces, as detailed in the specification are:

Test Method	Parameter	Vehicle Category		
		Ia	Ib	II
BS EN ISO 4589-3: Annex A	Flammability temperature (FT)	300 °C	300 °C	300 °C
Annex D.8.4 – Small-scale test	A ₀ (max)	0.017	0.027	0.061
Annex B Area based toxic fume	R (max) for vertical and horizontal prone surfaces	1.0	1.6	3.6

where the definitions of category are:

Category I: Underground
 Category II: Surface
 nc: no criterion

Therefore the material meets the requirements of vehicle category Ia for vertical surfaces, with respect to the tests performed.

These tests alone do not assess the fire hazard of the material, or a product made from this material, under actual fire conditions. Consequently, the results of these tests shall not be quoted in support of claims with respect to the fire hazard of the material or product under actual fire conditions. The results when used alone should only be used for research and development, quality control and material specifications.