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SUBJECT:

Surface spread of flame test on Brand: "TOILON", Model: "Thermotech IXPE FR Class O", Crosslinked Polyolefin foam faced with the reinforced aluminium foil for insulation submitted by PT. TOILON INDONESIA on 04 Nov 2024.

TESTED FOR:

PT. TOILON INDONESIA
Jl. Raya Serang Km. 16,8, Talaga, Cikupa,
Tangerang Regency
Banten 15710, Indonesia

DATE OF TEST:

05 Dec 2024

PURPOSE OF TEST:

To determine the tendency of the surface of a material or a combination of materials to support the spread of flame across its surface and to classify the surface according to the test given in British Standard 476 : Part 7 : 1997 "Method of test to determine the classification of the surface spread of flame of products".

The test was conducted at TÜV SÜD PSB's fire test laboratory located at No. 10 Tuas Avenue 10, Singapore 639134.

TÜV SÜD PSB

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LA-2010-0464-D
LA-2018-0702-B
LA-2018-0703-G
LA-2020-0747-L

The results reported herein have been performed in accordance with the terms of accreditation under the Singapore Accreditation Council. Inspections/Calibrations/Tests marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our inspection body/laboratory.

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Singapore 609937

DESCRIPTION OF SPECIMENS:

Nine pieces of specimen, said to be Brand: “TOILON”, Model: “Thermotech IXPE FR Class O”, Crosslinked Polyolefin foam faced with the reinforced aluminium foil for insulation, each of nominal size of 885mm x 270mm were received. The overall thickness, mass per unit area and bulk density of the specimen (reinforced aluminium foil with polyolefin foam) were measured to be 16mm, 1.76kg/m^2 and 110kg/m^3 respectively.

Details of the product, as provided by the sponsor of test, are as follows:

Brand	TOILON
Model	Thermotech IXPE FR Class O
Generic product name	Crosslinked Polyolefin foam
Material composition	Crosslinked Polyolefin foam faced with the reinforced aluminium foil
Country of Origin	Indonesia
Nominal thickness	15mm
Nominal density	25kg/m^3 (Foam only)
Nominal bulk density	110kg/m^3 (Reinforced aluminium foil with polyolefin foam)
Nominal mass per unit area	N/A
Fire retardant	N/A

TEST PROCEDURE:

Prior to test, the specimens were prepared and conditioned in accordance with paragraphs 5.3 to 5.6 of the standard and secured to a specimen holder as described in paragraph 6.3.

Six specimens, backed with non-combustible board, were tested with the reinforced aluminium foil face exposed to the specified thermal radiation from the apparatus described in paragraph 6.1 of the standard. The intensity of the radiated heat incident on the specimen varies with distance from the hotter end, so that when the specified calibration panel is mounted in the place to be occupied by the specimen, the irradiance of the radiometer is as given in Table 1. The test was terminated when the flame front reached the 825mm reference line, or after 10 minutes has elapsed, whichever is the shorter.

Table 1 : Irradiance Along Horizontal Reference Line on the Calibration Board

Distance along reference line from inside edge of specimen holder	Irradiance kW/m^2		
mm	specified	min.	max.
75	32.5	32.0	33.0
225	21.0	20.5	21.5
375	14.5	14.0	15.0
525	10.0	9.5	10.5
675	7.0	6.5	7.5
825	5.0	4.5	5.5

RESULTS OF TEST:

Specimen No.	1	2	3	4	5	6
Spread of flame at first 1½ minutes (mm)	0	0	0	0	0	0
Distance (mm)	Time of spread of flame to indicated distance (minutes • seconds)					
Start of flaming	nil	nil	nil	nil	nil	nil
75 165 190 215 240 265 290 375 455 500 525 600 675 710 750 785 825 865	-	-	-	-	-	-
Time of maximum spread of flame (minutes • seconds)	-	-	-	-	-	-
Distance of maximum spread of flame (mm)	0	0	0	0	0	0
Comments	-					

Classification of Surface Spread of Flame

Classification	Spread of flame at 1.5 min.		Final spread of flame	
	Limit (mm)	Limit for one specimen in sample (mm)	Limit (mm)	Limit for one specimen in sample (mm)
Class 1	165	165 + 25	165	165 + 25
Class 2	215	215 + 25	455	455 + 45
Class 3	265	265 + 25	710	710 + 75
Class 4	Exceeding the limits for class 3			

CONCLUSION:

In accordance with the class definitions specified in the Standard, the test results show that the sample tested has a Class 1 Surface Spread of Flame.

REMARKS:

1. 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.

Ye Wint Aung
Senior Associate Engineer

Chan Lung Toa
Assistant Vice President
Fire Testing
Mechanical Centre

Please note that this Report is issued under the following terms :

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Effective 27 March 2024