

Test Report No. 7191341279-MEC24-WYL
dated 06 Sep 2024



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SUBJECT:

Determination of emittance and light reflectance of crosslinked polyolefin foam.

TESTED FOR:

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

Attn.: Mr. Je Hwan Young

TEST METHODS:

1. ASTM E903:2020 - Standard test method for solar absorptance, reflectance, and transmittance of materials using integrating spheres
2. ASTM G173:2023 - Standard tables for reference solar spectral irradiances : Direct normal and hemispherical on 37° tilted surface
3. ASTM C1371:2015 (2022) - Standard Test Method For Determination Of Emittance Of Materials Near Room Temperature Using Portable Emissometers.

SAMPLE DESCRIPTION:

The following items were received on 29 Aug 2024 and claimed to be as follow:

Type of product : Crosslinked Polyolefin Foam
Brand Name : TOILON
Model Name : ThermoTech IXPE FR Class O (Premium UV Aluminum)
ThermoFoam XLPE FR Class O (Premium UV Aluminum)
Description : Toilon Crosslinked Polyolefin Closed Cell Foam
Thickness : 10mm



LA-2007-0380-A LA-2007-0386-C
LA-2007-0381-F LA-2010-0464-D
LA-2007-0382-B LA-2018-0702-B
LA-2007-0383-G LA-2018-0703-G
LA-2007-0384-G LA-2020-0747-L
LA-2007-0385-E

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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TUV®

TEST RESULTS:

Table 1: Light Reflectance of Toilon Crosslinked Polyolefin Closed Cell Foam

Light Reflectance		Sample	Estimated Uncertainty
Visible Light	Total Reflectance, Front (%)	94.2	± 0.6
	Diffuse Reflectance, Front (%)	87.1	± 0.6
	Calculated Specular Reflectance, Front (%)	7.1	± 1.8
Solar	Total Reflectance, Front (%)	95.7	± 0.6
	Diffuse Reflectance, Front (%)	89.0	± 1.0
	Calculated Specular Reflectance, Front (%)	6.7	± 2.3

INSTRUMENT:

Measurements were conducted using a Shimadzu Spectrometer UV3600, with an MPC3100 and a 60 mm integrating sphere.

CALCULATIONS:

For computing the visible light reflectance of the sample, the following parameters were taken into consideration:

- i) Weighted ordinates of relative spectral distribution of hemispherical tilt irradiance of air mass 1.5
- ii) Spectral region (380 - 780 nm)

For computing the solar reflectance of the glass, the following parameters were taken into consideration:

- i) Weighted ordinates of relative spectral distribution of hemispherical tilt irradiance of air mass 1.5
- ii) Spectral region (300 - 2500 nm)

REMARKS:

- 1. The test was conducted on 05 Sep 2024.
- 2. The expanded uncertainty of measurement is estimated at a level of confidence of approximately 95% with a coverage factor of $k = 2$.

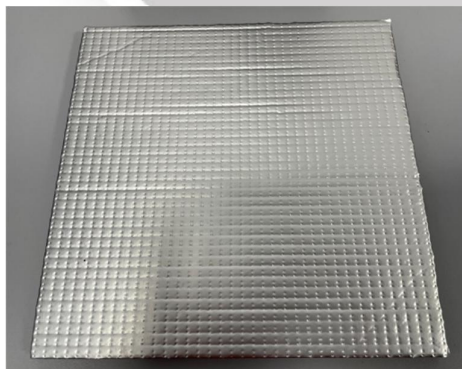


Photo 1: Sample as received (Tested surface)



TEST RESULTS: (cont'd)

Table 2: Emittance of Toilon Crosslinked Polyolefin Closed Cell Foam

Emittance (ϵ)			Average
Front	1 st Measurement	0.13	0.13
	2 nd Measurement	0.12	
	3 rd Measurement	0.13	
Back	1 st Measurement	0.13	0.13
	2 nd Measurement	0.13	
	3 rd Measurement	0.13	

REMARKS:

The test was conducted on 30 Aug 2024 and the room temperature is 23.8°C.

PHOTOS:

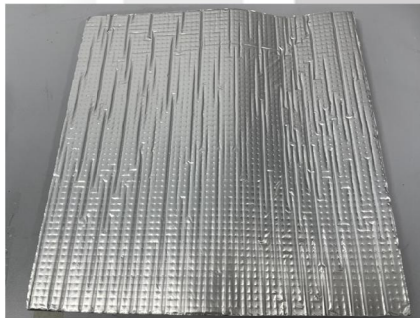


Photo 1: Front surface

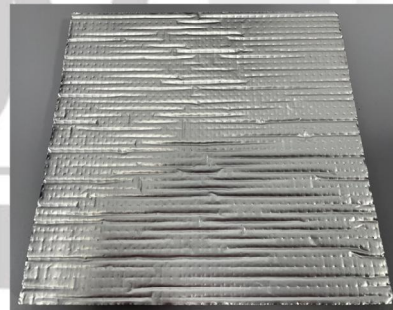


Photo 2: Back surface


Wang Yilin
Testing officer

Tan Boon Kwee
Assistant Vice President
Building & Acoustics Group
Real Estate & Infrastructure
Mechanical



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Effective 27 March 2024

