

Test Report No. 7191342565-MEC24-WYL
dated 02 Oct 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 24 Sep 2024 and claimed to be as follow:

Type of product : Crosslinked Polyolefin Foam
Brand Name : TOILON
Model Name : ThermoTech IXPE FR Class O (Eco Aluminum)
ThermoTech XLPE FR Class O (Eco Aluminum)
Description : Toilon Crosslinked Polyolefin Closed Cell Foam
Thickness : 12mm



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.

Laboratory:
TÜV SÜD PSB Pte. Ltd.
15 International Business Park
TÜV SÜD @ IBP
Singapore 609937

Phone : +65-6778 7777
E-mail: info.sg@tuvsud.com
<https://www.tuvsud.com/sg>
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
15 International Business Park
TÜV SÜD @ IBP
Singapore 609937
TUV®

TEST RESULTS:

Table 1: Light Reflectance of Tilon Crosslinked Polyolefin Closed Cell Foam (Eco Aluminum Surface)
based on ASTM E903

Light Reflectance		Sample	Estimated Uncertainty
Visible Light	Total Reflectance, Front (%)	83.6	± 0.6
	Diffuse Reflectance, Front (%)	77.3	± 0.6
	Calculated Specular Reflectance, Front (%)	6.3	± 1.6
Solar	Total Reflectance, Front (%)	85.0	± 0.5
	Diffuse Reflectance, Front (%)	79.0	± 0.9
	Calculated Specular Reflectance, Front (%)	6.0	± 2.1

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 25 Sep 2024.
- 2. The expanded uncertainty of measurement is estimated at a level of confidence of approximately 95% with a coverage factor of $k = 2$.

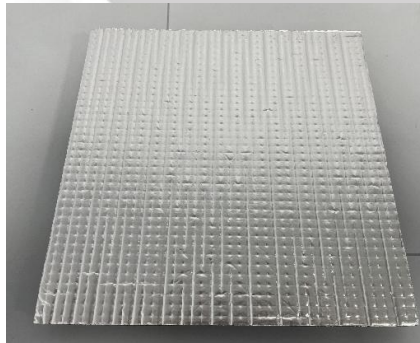


Photo 1: Sample as received (Tested surface)

TEST RESULTS: (cont'd)

Table 2: Emittance of Tilon Crosslinked Polyolefin Closed Cell Foam (Eco Aluminum Surface)
based on ASTM C1371

Emittance (ϵ)			Average
Front	1 st Measurement	0.06	0.06
	2 nd Measurement	0.06	
	3 rd Measurement	0.06	
Back	1 st Measurement	0.06	0.06
	2 nd Measurement	0.06	
	3 rd Measurement	0.07	

REMARKS:

The test was conducted on 26 Sep 2024 and the room temperature is 23.5°C.

PHOTOS:

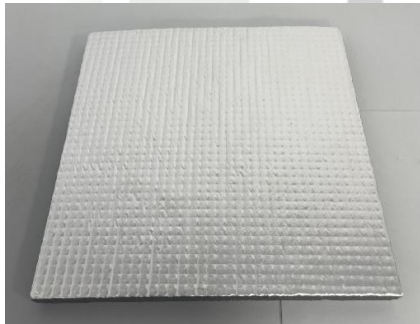


Photo 2: Front surface

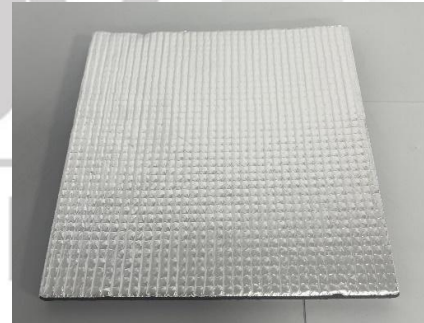



Photo 3: Back surface


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

