

Test Report No. 7191247876-MEC20/04-JV
dated 04 Jan 2021

Note: This report is issued subject to the Testing and Certification Regulations of the TÜV SÜD Group and the General Terms and Conditions of Business of TÜV SÜD PSB Pte Ltd. In addition, this report is governed by the terms set out within this report.



PSB Singapore

**Add value.
Inspire trust.**

SUBJECT:

Determination of the toxic fume generated by Brand: "Woven Image" Model: "Mura™" 100% Polyethylene Terephthalate (PET) (60% recycled) material submitted by Woven Image Singapore Pte Ltd on 09 November 2020.

TESTED FOR:

Woven Image Pty Ltd
37-39 Chard Road
Brookvale NSW 2100
Australia

DATE OF TEST:

09 Dec 2020

PURPOSE OF TEST:

To determine the toxic fume generated from materials or products of thickness not exceeding 25.4mm when mounted in the horizontal position and tested in accordance to test method references T11.01 of BS EN 45545-2 : 2013 +A1 : 2015 Annex C, Method 1 (smoke chamber).

This test was conducted in accordance with the procedures specified in BS EN 45545-2:2013 +A1 : 2015 Annex C and using the apparatus and procedures specified in ISO 5659-2 : 2017.

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



TÜV SÜD PSB

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

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

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

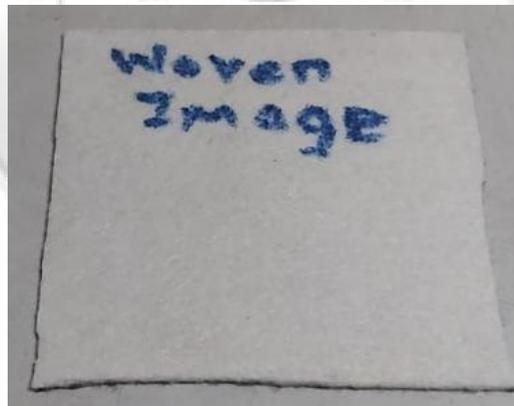
DESCRIPTION OF SAMPLES:

Six pieces of specimen, said to be Brand: "Woven Image" Model: "Mura™" 100% Polyethylene Terephthalate (PET) (60% recycled) material each of nominal size 75mm x 75mm x 1.9mm thick were received. The area and bulk density of the specimen were measured to be 0.39 kg/m² and 188.7 kg/m³ respectively.

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

Brand	Woven Image
Model reference	Mura™
Generic product name	Mura™
Material composition	100% PET (60% recycled)
Country of origin	Australia
Area Density	0.350 kg/m ²
Thickness	1.90mm
Fire retardant	N.A.

Photograph of specimen:



Yik Han



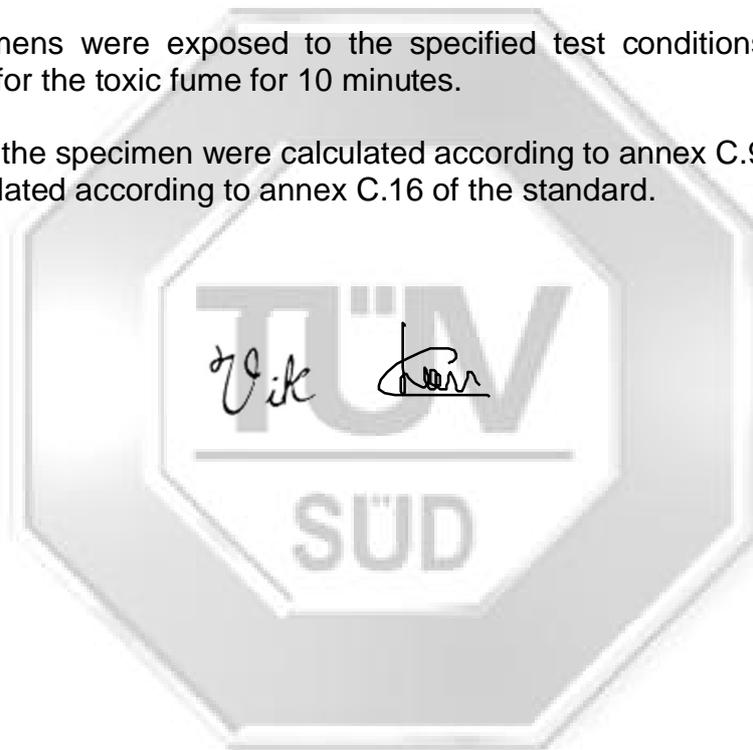
TEST PROCEDURES:

The test was conducted using the ISO 5659-2 smoke chamber (Asset No. 191010483) in conjunction with a FTIR Analyzer (Serial No. AFS-B2-C-1716) with their respective spreadsheets. Both systems, operating at the same time, were dedicated for the acquisition and analysis of opacity of the smoke and the qualitative and quantitative analysis of gases emitted during the test.

Prior to test, the specimens were prepared and conditioned in accordance to annex C.5 of BS EN 45545-2.

The test specimens were exposed to the specified test conditions according to Method T11.01 for the toxic fume for 10 minutes.

The gas data of the specimen were calculated according to annex C.9 and the CIT value was calculated according to annex C.16 of the standard.





TEST RESULTS:

Test Parameters	Specimen 1	Specimen 2	Specimen 3	Average
Time of ignition (sec)	60	55	50	55
Initial Mass (gm)	2.30	2.40	2.50	2.40
Final Mass (gm)	0.00	0.00	0.00	0.00
Mass Loss (gm)	2.30	2.40	2.50	2.40
Observations	1) Smoke emission started between 8 to 10 seconds of test for all specimens.			

The concentration of each gas sampled at 240s of test is as follows:

Gas	Specimen 1		Specimen 2		Specimen 3		Average		
	ppm	Kg/m ³	ppm	Kg/m ³	ppm	Kg/m ³	ppm	Kg/m ³	
Carbon Dioxide (CO ₂)	1592.48	0.00	2243.74	0.00	3430.97	0.01	2422.40	0.00	
Carbon Monoxide (CO)	76.92	0.00	117.18	0.00	239.00	0.00	144.37	0.00	
Nitrogen Oxide (NO _x)	NO	3.23	0.00	2.89	0.00	2.88	0.00	3.00	0.00
	NO ₂	ND	ND	ND	ND	ND	ND	ND	ND
Sulphur Dioxide (SO ₂)	12.26	0.00	13.09	0.00	8.57	0.00	11.31	0.00	
Hydrogen Chloride (HCl)	2.54	0.00	0.25	0.00	0.51	0.00	1.10	0.00	
Hydrogen Bromide (HBr)	ND	ND	ND	ND	ND	ND	ND	ND	
Hydrogen Fluoride (HF)	ND	ND	ND	ND	ND	ND	ND	ND	
Hydrogen Cyanide (HCN)	ND	ND	ND	ND	ND	ND	ND	ND	
CIT _G	0.00		0.00		0.00		0.00		

*ND – Not Detected

Vik *han*



TEST RESULTS (cont'd):

The concentration of each gas sampled at 480s of test is as follows:

Gas		Specimen 1		Specimen 2		Specimen 3		Average	
		ppm	Kg/m ³	ppm	Kg/m ³	ppm	Kg/m ³	ppm	Kg/m ³
Carbon Dioxide (CO ₂)		1823.08	0.00	2380.48	0.00	3840.08	0.01	2681.21	0.00
Carbon Monoxide (CO)		116.85	0.00	204.72	0.00	333.54	0.00	218.37	0.00
Nitrogen Oxide (NO _x)	NO	3.18	0.00	3.50	0.00	2.66	0.00	3.11	0.00
	NO ₂	ND	ND	ND	ND	ND	ND	ND	ND
Sulphur Dioxide (SO ₂)		14.20	0.00	16.75	0.00	9.31	0.00	13.42	0.00
Hydrogen Chloride (HCl)		2.85	0.00	0.28	0.00	0.69	0.00	1.27	0.00
Hydrogen Bromide (HBr)		ND	ND	0.15	0.00	ND	ND	0.15	0.00
Hydrogen Fluoride (HF)		ND	ND	ND	ND	ND	ND	ND	ND
Hydrogen Cyanide (HCN)		ND	ND	ND	ND	ND	ND	ND	ND
CIT _G		0.00		0.00		0.00		0.00	

*ND – Not Detected

Vik *Kan*



CONCLUSION:

In accordance to test method references T11.01 of BS EN 45545-2 : 2013 +A1 : 2015 Annex C, Method 1 (smoke chamber) method, **Brand: "Woven Image" Model: "Mura™" (1.90mm thick, 0.350 kg/m²) 100% Polyethylene Terephthalate (PET) (60% recycled) material**, achieved the following average values:

CIT_G at 240 sec : 0.00
CIT_G at 480 sec : 0.00

REMARKS:

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.


Vikneshwaran Jayaraman
Assistant Manager


Chan Lung Toa
Assistant Vice President
(Fire Property)
Mechanical

Test Report No. 7191247876-MEC20/04-JV
dated 04 Jan 2021



PSB Singapore

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

1. This report applies to the sample of the specific product/equipment given at the time of its testing/calibration. The results are not used to indicate or imply that they are applicable to other similar items. In addition, such results must not be used to indicate or imply that TÜV SÜD PSB approves, recommends or endorses the manufacturer, supplier or user of such product/equipment, or that TÜV SÜD PSB in any way "guarantees" the later performance of the product/equipment. Unless otherwise stated in this report, no tests were conducted to determine long term effects of using the specific product/equipment.
2. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. TÜV SÜD PSB therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture, consignment or any information supplied.
3. Nothing in this report shall be interpreted to mean that TÜV SÜD PSB has verified or ascertained any endorsement or marks from any other testing authority or bodies that may be found on that sample.
4. This report shall not be reproduced wholly or in parts and no reference shall be made by the Client to TÜV SÜD PSB or to the report or results furnished by TÜV SÜD PSB in any advertisements or sales promotion.
5. Unless otherwise stated, the tests were carried out in TÜV SÜD PSB Pte Ltd, 15 International Business Park Singapore 609937.
6. The tests carried out by TÜV SÜD PSB and this report are subject to TÜV SÜD PSB's General Terms and Conditions of Business and the Testing and Certification Regulations of the TÜV SÜD Group.

Effective 01 January 2021

