

## Test Report

Report No.: AJFS2208006282FF

Date: AUG.25, 2022

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### TFS MANUFACTURING SDN BHD

LOT 2489-10, BATU 6 1/4, JALAN GOMBAK, 53100 GOMBAK, KUALA LUMPUR

#### Sample Description: PVC TARPAULIN

Color: GREY

Style/Item No.: /

The above sample(s) was / were submitted and identified on behalf of the client. SGS is not responsible for the authenticity, integrity and results of the data and information and / or the validity of the conclusion arising therefrom. Results apply to the sample as received.

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#### Test Requested:

DIN 4102-1:1998-05 Fire behaviour of building materials and elements Part 1: Classification of building materials, Requirements and testing, Class B1 materials---For all materials except flooring.

Test Results: -- See attached sheet --

Classification: The tested sample **meets** class **B1** materials requirements of DIN 4102-1:1998-05.

#### Test Period:

Sample Receiving Date : AUG.08, 2022

Test Performing Date : AUG.08, 2022 TO AUG.23, 2022

Signed for and on behalf of

SGS-CSTC Standards Technical Services Co., Ltd. Anji Branch



Allen Zou  
Approved Signatory

scan to see the report



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**I. Test conducted**

This test was conducted as per DIN 4102-15:1990 Fire behaviour of building materials and elements – ‘Brandschacht’ apparatus, DIN 4102-16:2015 Fire behaviour of building materials and elements – ‘Brandschacht’ tests and DIN 4102-1:1998-05 Clause 6.2.5 and Classification according to DIN 4102-1:1998-05 Clause 6.1 Class B1 materials.

**II. Sample details**

General description	PVC Tarpaulin (provided by client)
Color	Grey
Area Density	814 g/m <sup>2</sup>
Size of sample	190mm×1000mm & 190mm×90mm

**Conditioning:**

Prior to testing, the sample was conditioned at least 14 days to constant mass at a temperature of 23 ± 2 °C, and a relative humidity of 50 ± 5 %.

**III. Test results**
**1) “Brandschacht” Test according to DIN 4102-15 &16**

Exposed surface: The front face

Results of “Brandschacht” Test (part 1)					
Line No.	Unit	Test assemblies No.			
		A	B	C	D
1	Specimen fixings according to DIN 4102 part 15, table	-	/		
2	Max. flame height above lower sample edge;	cm	40		
3	Time <sup>1)</sup>	min:s	01:07		
4	<u>Melting/burning through</u> Time <sup>1)</sup>	min:s	00:25		
5	<u>Back of specimen</u> Flaming/glowing, Time <sup>1)</sup>	min:s	00:25		
6	Discolouring, Time <sup>1)</sup>	min:s	00:17		
7	<u>Burning droplets</u> Begin <sup>1)</sup>	min:s	00:42		
8	<u>Amount</u> Specimen material falling off in separate droplets		/		
9	Specimen material falling off continuously		✓		



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Results of "Brandschacht" Test (part 2)						
Line No.	Unit	Test assemblies No.				
		A	B	C	D	
10	<u>Burning parts</u> Begin <sup>1)</sup>	min:s	No /			
11	Parts of sample falling off separately		/			
12	Parts of sample falling off continuously		/			
13	Duration of continued combustion on mesh base (max.)	min:s	No			
14	<u>Burner flame impairment by dripping/falling material</u> Time <sup>1)</sup>	min:s	No /			
15	<u>Premature ending of test</u> End of burning at specimen <sup>1)</sup>	min:s	/			
16	Time when test terminated (if applicable) <sup>1)</sup>	min:s	/			
17	<u>Burning after end of test</u> Duration	min:s	No /			
18	Number of specimens		/			
19	Front of specimen		/			
20	Back of specimen		/			
21	Height of flame	cm	/			
22	<u>Glowing after end of test</u> Duration	min:s	No /			
23	Number of specimens		/			
24	Front of specimen		/			
25	Back of specimen		/			
26	Top half of specimen		/			
27	Bottom half of specimen		/			



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Results of "Brandschacht" Test (part 3)						
Line No.	Unit	Test assemblies No.				
		A	B	C	D	
28	<u>Residual length</u>					
	Single results	66	68			
		64	66			
29	Average of the single results	66.0				
30	<u>Smoke temperature</u>	/				
	Max. of average	174.8				
31	Time <sup>1)</sup>	05:14				

Note: <sup>1)</sup> time from start of testing

\*Reduction in number of test (DIN 4102 Part 16, clause 5.2)

Class B1 materials:

If the residual length measured after the first test is 45cm or greater, further tests are not required.

**2) Ignitibility test according to DIN 4102-1 Clause 6.2.5**

Edge ignition

Fire application time: 15s

Parameter	1	2	3	4	5
Whether or not flaming extinguished before reach the gauge mark (Yes/No)	Yes	Yes	Yes	Yes	Yes
Whether or not flaming reach the measuring mark within 20 seconds (Yes/No)	No	No	No	No	No
Time for the flame tip to reach the gauge mark (s)	NA	NA	NA	NA	NA
Afterflame time (s)	2	1	2	3	1
Max. flame height (cm)	6	5	5	7	6
Molten dripping (Yes/No)	No	No	No	No	No
Smoke developments (visual impression)	Medium				

Note: NA---Not applicable



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### IV. DIN 4102-1:1998 Criteria for classification

1) All materials, except flooring, may be classed as **B1** materials if they meet the following requirements a) and b):

a) The test using the 'Brandschacht' apparatus described in DIN 4102-15 (cf. subclause 6.1.3.1) shall be deemed passed if

– The mean value for the residual length (portion of specimen that has not burned or charred; cf. subclause 9.1 of DIN 4102-16) of each specimen is at least 15 cm and no individual values are lower than 0 cm,

– The mean effluent temperature does not exceed 200 °C in any test,

– The requirement for the residual length of each specimen is met even where there is afterflame, afterglow, or smouldering.

b) Pass DIN 4102-1:1998 sub-clause 6.2.5 Ignitability Test if

For each specimen, flaming doesn't reach the gage mark within 20s after flame application.

2) Materials may be classed as **B2** materials if they pass the ignitability test specified in DIN 4102-1:1998 subclause 6.2.5.

For each specimen, flaming doesn't reach the gage mark (150mm marks) within 20s after flame application.

3) Combustible materials which cannot be classed as B1 or B2 materials shall be classed as **B3** materials.

### STATEMENTS:

This declaration of conformity is only based on the result of this laboratory activity, the impact of the uncertainty of the results was not included.

This test report does not replace any mandatory certification of the product that may be required.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire and smoke hazard of the product in use.



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### Photo Appendix:



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\*\*\* End of Report \*\*\*



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