

Test Report

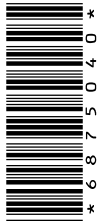
No. 6875040

Date: 13.05.2024

Zimmer + Rhode
 Zimmersmühlenweg 14-18
 DE-61440 Oberursel/Frankfurt
 Germany

The following sample(s) was (were) submitted and identified by the client as:

Original Sample ID	Sample Description	Sample Receipt Date
240279774	Stoffabschnitt Muster Artikel 3116	18/03/2024



SGS Customer No : 10083859
 SGS Order No : 6942923
 Buyer : -
 Order No. : 3116 dt. 15/03/2024
 Country of Origin : -
 Test Performing Period : 02/04/2024 – 13/05/2024
 Test Performed : Selected test(s) as requested by applicant

Overall Conclusion : **The tested sample meets class B1 building materials requirements of DIN 4102-1 (May 1998).**

Test Results : Please refer to the next pages

SGS INSTITUT FRESENIUS GmbH

This test report was electronically created and released:

	date	name		function	department
created	13.05.2024	i.A.	Marilyn Mohr	Customer Service Assistant	Connectivity & Products
released	13.05.2024	i.A.	Wolfgang Löffler	Project Manager	Connectivity & Products

Test report no. 6875040

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SGS Order No.: 6942923
 Date: 13.05.2024
 Page 2/7

Performed Test Summary:

Test	Result
Class B1 building materials requirements of DIN 4102-1*	M

Remarks:

- M = Meets Client's requirement
- F = Does not meet Client's requirement
- I = Inconclusive
- = No specified requirement

Note: Conclusions on pass/fail are based on the test result from the actual sampling of the received sample(s).

Conclusions are based on the relevant requirements; measurement uncertainties are not taken into account. Only results above the relevant detection limit are taken into account for the calculation of sums.

Test was conducted on composite of random parts of the item as per client's request and the test result is the overall result.

The composite sampling method is based on the client's special request and is a modification from the testing standard.

For 2-composite mix with results exceeding one half of the relevant requirements or 3-composite mix with results exceeding one third of the relevant requirements, the composite sample may have the possibility of one or more components that can lead to a failure result, it is recommended to test on individual basis.

Test report no. 6875040

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SGS Order No.: 6942923
Date: 13.05.2024
Page 3/7

Analytical results

I. Test conducted

This test was conducted as per DIN 4102-15:1990 Fire behaviour of building materials and building components – ‘Brandschacht’ apparatus, DIN 4102-16:2021 Fire behaviour of building materials and building components– ‘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	Fabric (provided by client)
Color	Beige
Area Density	124 g/m ²
Size of sample	190mm×1000mm & 190mm×90mm & 230mm×90mm
Exposed (tested) surface	Front surface

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

Results of “Brandschacht” Test (part 1)				
Line No.	Unit	Test direction		
		Lengthwise	Widthwise	
1	Specimen fixings according to DIN 4102 part 15, table	/	/	/
2	Max. flame height above lower sample edge;	cm	40	40
3	Time ¹⁾	min:s	00:29	00:33
4	<u>Melting/burning through</u> Time ¹⁾	min:s	00:01	00:01
5	<u>Back of specimen</u> Flaming/glowing, Time ¹⁾	min:s	00:01	00:01
6	Discolouring, Time ¹⁾	min:s	00:01	00:01
7	<u>Burning droplets</u> Begin 1)	min:s	00:07	00:06
	<u>Amount</u>		/	/
8	Specimen material falling off in separate droplets		√	√
9	Specimen material falling off continuously		/	/

Test report no. 6875040

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SGS Order No.: 6942923
 Date: 13.05.2024
 Page 4/7

Results of "Brandschacht" Test (part 2)

Line No.	Unit	Test direction	
		Lengthwise	Widthwise
	<u>Burning parts</u>	No	No
10	Begin 1)	/	/
11	Parts of sample falling off separately	/	/
12	Parts of sample falling off continuously	/	/
13	Duration of continued combustion on mesh base (max.)	No	No
	<u>Burner flame impairment by dripping/falling material</u>	No	No
14	Time ¹⁾	/	/
	<u>Premature ending of test</u>	/	/
15	End of burning at specimen ¹⁾	/	/
16	Time when test terminated (if applicable) ¹⁾	/	/
	<u>Burning after end of test</u>	No	No
17	Duration	/	/
18	Number of specimens	/	/
19	Front of specimen	/	/
20	Back of specimen	/	/
21	Height of flame	/	/
	<u>Glowing after end of test</u>	No	No
22	Duration	/	/
23	Number of specimens	/	/
24	Front of specimen	/	/
25	Back of specimen	/	/
26	Top half of specimen	/	/
27	Bottom half of specimen	/	/
	<u>Smoke density</u>	Yes	Yes
28	≤ 400 %×min	√	√
29	> 400 %×min	/	/

Test report no. 6875040

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SGS Order No.: 6942923
 Date: 13.05.2024
 Page 5/7

Results of "Brandschacht" Test (part 3)

Line No.	Unit	Test direction			
		Lengthwise		Widthwise	
	<u>Residual length</u>	/		/	
30	Single results	63	65	64	63
31	Average of the single results	61	64	65	64
		63.3		64.0	
	<u>Smoke temperature</u>	/		/	
32	Max. of average	°C		129.1	127.5
33	Time ¹⁾	min:s		03:42	03:28

Note: ¹⁾ 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

a) Surface ignition

Fire application time: 15s

Parameter	Lengthwise					Widthwise				
	1	2	3	4	5	6	7	8	9	10
Whether or not flaming extinguished before reach the gauge mark (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Whether or not flaming reach the measuring mark within 20 seconds (Yes/No)	No	No	No	No	No	No	No	No	No	No
Time for the flame tip to reach the gauge mark (s)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Afterflame time (s)	0	0	0	0	0	0	0	0	0	0
Max. flame height (cm)	5	5	6	5	7	5	6	6	5	5
Molten dripping (Yes/No)	No	No	No	No	No	No	No	No	No	No
Smoke developments (visual impression)	Slight					Slight				

Test report no. 6875040

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SGS Order No.: 6942923
 Date: 13.05.2024
 Page 6/7

b) Edge ignition

Fire application time: 15s

Parameter	Lengthwise					Widthwise				
	1	2	3	4	5	6	7	8	9	10
Whether or not flaming extinguished before reach the gauge mark (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Whether or not flaming reach the measuring mark within 20 seconds (Yes/No)	No	No	No	No	No	No	No	No	No	No
Time for the flame tip to reach the gauge mark (s)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Afterflame time (s)	0	0	0	0	0	0	0	0	0	0
Max. flame height (cm)	7	6	7	5	6	6	7	5	8	6
Molten dripping (Yes/No)	No	No	No	No	No	No	No	No	No	No
Smoke developments (visual impression)	Slight					Slight				

Note: NA = Not applicable

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.

Test report no. 6875040

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SGS Order No.: 6942923
Date: 13.05.2024
Page 7/7

Attachment: Picture of sample



*** End of test report ***

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