

Test Report

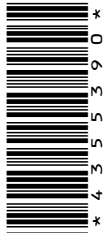
No. 4355390

Date: 26/06/2019

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 |
|--------------------|--------------------|---------------------|
| 190497569 | Article No. 10780 | 08/05/2019 |



SGS Customer No : 10083859
 SGS Order No : 4955995
 Test Report Version : 1
 Buyer : -
 Order No. : - dt. 07/05/2019
 Country of Origin : -
 Test Performing Period : 04/06/2019 – 26/06/2019
 Test Performed : Selected test(s) as requested by applicant
Overall Assessment : 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 | 26.06.2019 | i. A. | Irina Neumann | Project Assistant | CRS NonFood - Softline |
| released | 28.06.2019 | i.V. | Kerstin Buchmann | Projektleiterin | CRS NonFood - Softlines |

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Photo documentation



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I. Test conducted*

This test was conducted as per DIN 4102-15:1990 DIN 4102-16:1998 and DIN 4102-1:1998 Clause 6.2, and Classification in according to DIN 4102-1 (May 1998) Clause 6.1-Class B1 materials.

II. Sample details

| | |
|---------------------|---------------------------|
| General description | Woven fabric |
| Color | Grey |
| Density | 287 g/m ² |
| Size of sample | 1000mm×190mm & 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 ± 6 %.

III. Test results

1) “Brandschacht” Test according to DIN 4102-15 &16

Exposed surface: The smooth face

| Results of “Brandschacht” Test (part 1) | | | | |
|---|---|---------------------|-----------|---|
| Line No. | Unit | Test assemblies No. | | |
| | | Lengthwise | Widthwise | |
| 1 | Specimen fixings according to DIN 4102 part 15, table | / | / | / |
| 2 | Max. flame height above lower sample edge; | cm | 60 | / |
| 3 | Time ¹⁾ | min:s | 0:13 | / |
| | <u>Melting/burning through</u> | | / | / |
| 4 | Time ¹⁾ | min:s | 0:08 | / |
| | <u>Back of specimen</u> | | / | / |
| 5 | Flaming/glowing, Time ¹⁾ | min:s | 0:06 | / |
| 6 | Discolouring, Time ¹⁾ | min:s | 0:05 | / |
| | <u>Burning droplets</u> | | No | / |
| 7 | Begin ¹⁾ | min:s | / | / |
| | <u>Amount</u> | | / | / |
| 8 | 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. | |
| | | Lengthwise | Widthwise |
| | <u>Burning parts</u> | 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 | / |
| | <u>Burner flame impairment by dripping/falling material</u> | 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 | / |
| 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 | / |
| 22 | Duration | / | / |
| 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. | | | |
| | | Lengthwise | | Widthwise | |
| | <u>Residual length</u> | / | | / | |
| 28 | Single results | cm | 72 | 70 | / / |
| 29 | Average of the single results | cm | 73 | 71 | / / |
| | <u>Smoke temperature</u> | | / | | / |
| 30 | Max. of average | °C | 155.2 | | / |
| 31 | Time ¹⁾ | min:s | 07:15 | | / |

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) Normal Flammability Test according to DIN 4102-1 Clause 6.2

Edge ignition

Fire application time: 15s

| Parameter | 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 | 8 | 7 | 7 | 8 | 7 | 9 | 8 | 8 | 7 |
| Molten dripping(Yes/No) | No | No | No | No | 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 6.2.3 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.

*** End of test report ***

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