

Germany  
B1 Fire Rating

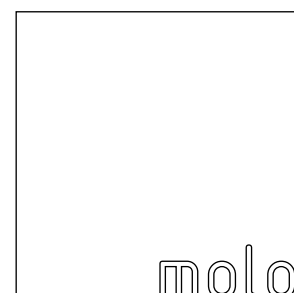
kraft paper products

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## **molo kraft paper products B1 fire rating – Germany**

molo kraft paper products have achieved a German B1 fire rating and have passed the North American standard NFPA 701 and French M1 rating. B1 (Brandschacht) is the main test method in Germany which measures reaction to fire and is considered the highest flammability standard in the country.

molo kraft paper products are completely fire retardant and are difficult to ignite / self-extinguishing.

This rating is consistent with use in all types of occupancies.

All products should always be kept away from any open flame or heat source to avoid possible damage.



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## Test report No. 2016-1705

for applying of a required "Verwendbarkeitsnachweis"  
issued 10.08.2016

**Applicant:** molo design ltd.  
1470 Venables St.  
Vancouver, BC  
V5L 2G7

**Date of order:** 16.07.2016  
**Date of sampling:** *no official sampling of the specimen by a representative of Exova Warringtonfire, Frankfurt*  
**Date of arrival:** 21.07.2016  
**Date of test:** 05.08.2016 und 08.08.2016

### Order

Testing of the flammability (building class B1) according to DIN 4102-1 (May 1998)

### Description / designation of the test object

Sample material designated as: Kraft paper for soft collection

### Description of the relevant test procedure

DIN 4102 part 1 (Mai 1998)

This test report does not replace the required „Verwendbarkeitsnachweis“. It is only used for issuing the "Verwendbarkeitsnachweis".

## 1. Description of the test material

### 1.1 Details of the customer:

Sample material designated as: Kraft paper for soft collection

1. layer of the kraft paper used to construct our honeycomb in softwall + softblock + softseating + benchwall + cantilever table

brown Kraft – weight: 120 g/m<sup>2</sup> (paper; 105 g/m<sup>2</sup> + FR; 15 g/m<sup>2</sup>) 104cm roll width thickness 180 μ (+/-50μ)

20% recycled content FR applied by paper manufacturer AF-100 treated

Intended end use of product: Interior wall partitions and seating  
softwall + softblock + softseating + benchwall + cantilever table

### 1.2 By Exova Warringtonfire, Frankfurt determined values:

Paper

Colour:	brown
Thickness:	0,18 mm
Square weight:	121 g/m <sup>2</sup>

Testing after storing 14- days under climatic conditions (23°C / 50 % rel. humidity).

## 2. Test results

### 2.1.1 Brandschachtprüfung according to DIN 4102-1

Sample A: Material tested in production direction

Sample B: Material tested in production direction

Sample C: Material tested in production direction

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			A	B	C	D
1	<u>no. test arrangement according to DIN 4102 part 15, table 1</u>		1	1	1	
2	<u>flame height max. over lower sample edge</u> time <sup>1)</sup>	cm	60	60	60	
		min : s	0:10	0:08	0:08	
3	<u>ascertainties on the front side</u> Flaming/glowing time <sup>1)</sup>	min : s	0:05	0:04	0:04	
4	<u>melting / burning through</u> time <sup>1)</sup>	min : s	0:13	0:13	0:09	
5	<u>ascertainties on the back side</u> Flaming/glowing time <sup>1)</sup>	min : s	not occurred	not occurred	not occurred	
6	discolouring time <sup>1)</sup>	min : s	no	no	no	
7	<u>burning droplets</u> begin <sup>1)</sup>	min : s	not occurred	not occurred	not occurred	
8	extent					
9	occasional dropping of material constant dropping of material					
10	<u>separating from burning sample parts</u> begin <sup>1)</sup>	min : s	no	no	no	
11	occasional separating parts					
12	constant separating parts					
13	duration of burning on the sieve tray (max.)	min : s	not occurred	not occurred	not occurred	
14	<u>influence on the burner flame by dropping of / separating material</u> time <sup>1)</sup>	min : s	no	no	no	
15	<u>earlier end of test</u> end of the fire scenario on the sample <sup>1)</sup>	min : s	no	no	no	
16	time of a possible resulted test stop <sup>1)</sup>	min : s				

<sup>1)</sup> time from start of test

Test results of the Brandschacht tests part 2						
line no.		Measurements test sample				
			A	B	C	
17	<u>flaming after end of test</u> duration	min : s	--/--	--/--	--/--	
18	number of sample		--/--	--/--	--/--	
19	front side of sample	cm	--/--	--/--	--/--	
20	backside of sample		--/--	--/--	--/--	
21	flame length		--/--	--/--	--/--	
22	<u>glowing after end of test</u> duration	min . s	not occured	not occured	not occured	
23	number of sample		--/--	--/--	--/--	
24	place of occurrence		--/--	--/--	--/--	
25	lower sample part		--/--	--/--	--/--	
26	upper sample part		--/--	--/--	--/--	
27	front side of sample		--/--	--/--	--/--	
27	backside of sample		--/--	--/--	--/--	
28	<u>smoke density</u> < 400 % x min		2	10	10	
29	> 440 % x min		--/--	--/--	--/--	
30	diagram in annex no.		1	2	3	
31	<u>residual length</u> single results	cm	32 / 36 42 / 42	44 / 40 48 / 40	35 / 34 40 / 30	
32	average of the single results	cm	38	43	34	
33	photo of the sample on page		5	5	5	
34	<u>smoke temperature</u> max. of the average results	°C min : s	113	117	115	
35	time <sup>1)</sup>		7:07	9:28	8:11	
36	diagram in annex no.		1	2	3	

<sup>1)</sup> time from start of test

Remarks:

2.1.2 Appearance of the specimen after the test:



Sample A



Sample B



Probe C

2.2.1 Normal flammability test according to DIN 4102-1

Test with edge ignition without deposit  
 Flame application on: lower sample edge  
 Edge ignition

Sample-no.	1	2	3	4	5
Time from start of test					
Ignition point [s]	1	1	1	1	1
Reaching the measuring mark within 20 seconds	no	no	no	no	no
Self-extinguishing of the flame [s]	4	5	5	4	4
Max. flame height [mm]	30	50	50	40	40
Time [s]	3	3	3	3	3
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visual impression) <sub>low / moderate / strong</sub>	Low smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none



2.2.2 Appearance of the sample after the small burner test:



## Assessment

The material described in chapter one fulfils the requirements of the building class B2 according to DIN 4102-1 (Mai 1998).

The determined test results show that the material also fulfils the requirements

### of the building class B1

according to DIN 4102-1 (Mai 1998).

## Special note

The fire test result is only valid for the material described in chapter one in the tested colour and square weight.

The test was carried out in free hanging configuration.

The distance to other plane material must be more or equal then 40 mm.

The material wasn't tested after an outside storage.

In combination with other materials (for example coatings, deposits) the burning behaviour could be influenced unfavourable so that the classification above is not valid any longer. According to DIN 4102-1 the burning behaviour in combination with other materials has to be tested separately.

This test report does not replace the required „Verwendbarkeitsnachweis“. It is only used for issuing the “Verwendbarkeitsnachweis”.

Frankfurt, the 10.08.2016

A handwritten signature in blue ink that reads "Anders".

H. Anders  
Tester in Charge

A handwritten signature in blue ink that reads "P. Scheinkönig".

P. Scheinkönig  
Deputy head of the business

This Test report is valid until 04.08.2021

The results of the tests relate only to the behaviour of the test specimen which is designated on the top.

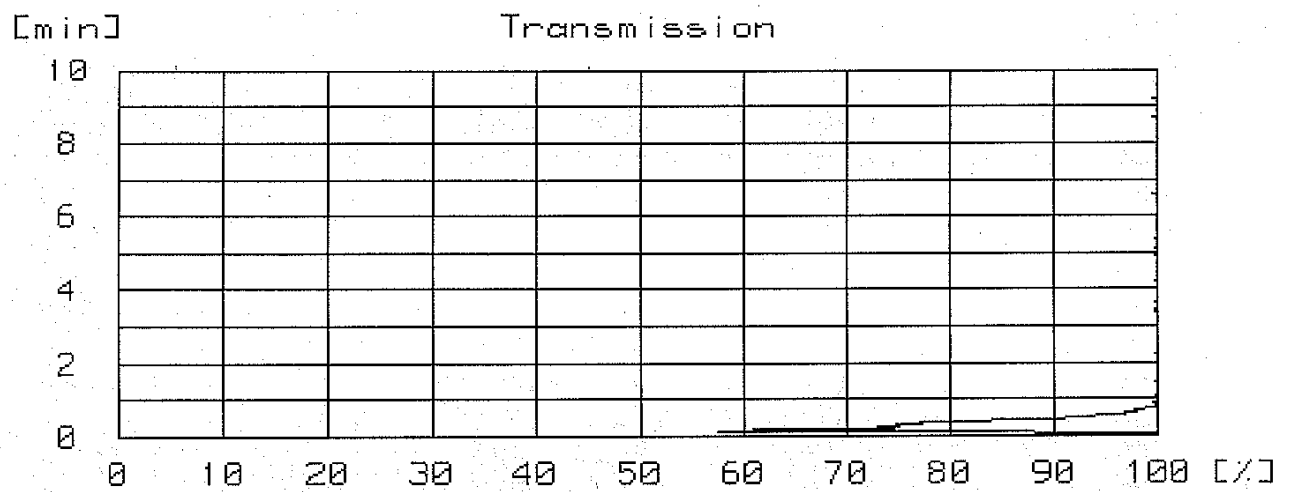
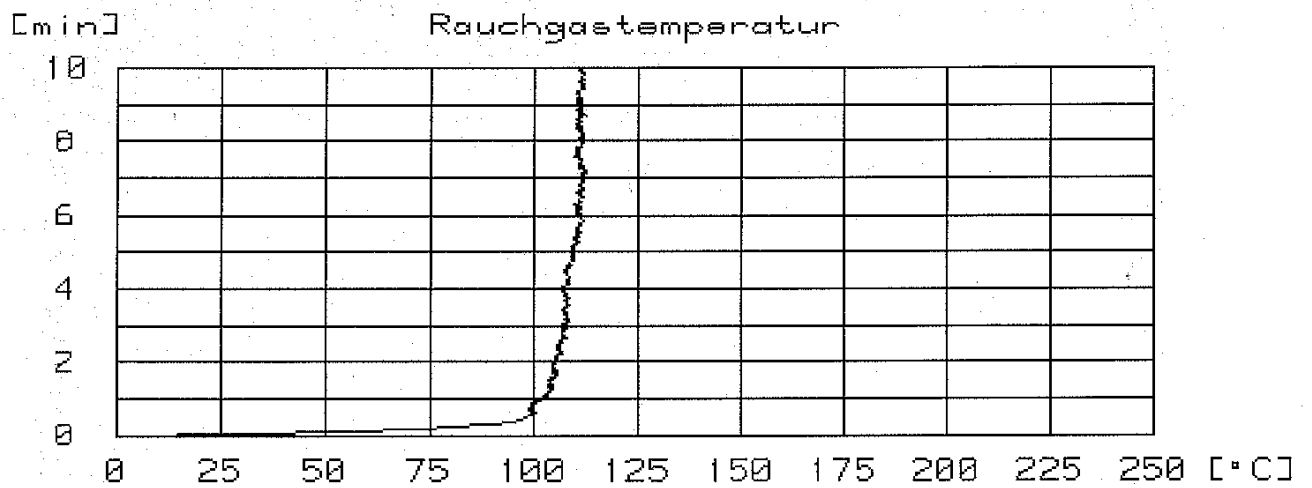
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This test report is a translation of the German version 2016-1705 (issued 10.08.2016). In case of doubt only the German version is valid

This test report contains 8 pages and 3 annexes.

Annex 1 to the Test report No. 2016-1705 issued 10.08.2016

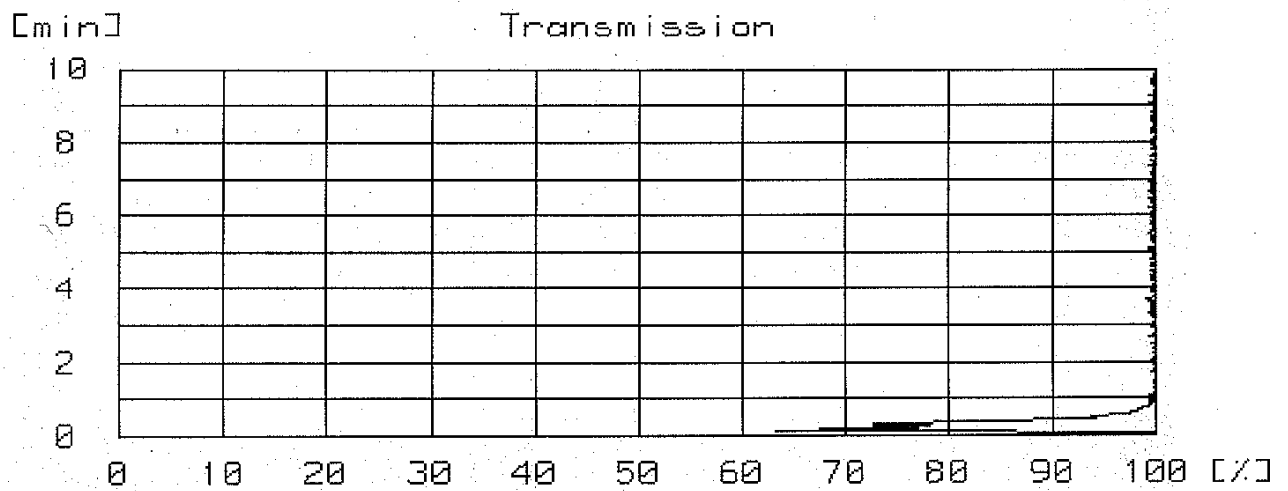
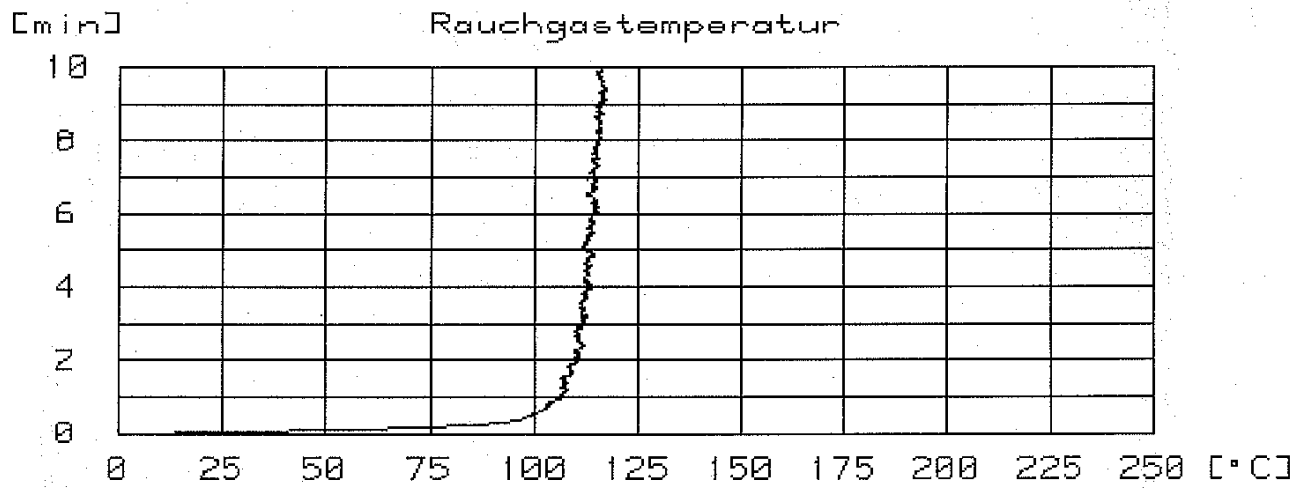
Sample A:



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Annex 2 to the Test report No. 2016-1705 issued 10.08.2016

Sample B:



Sample C:

