

Germany  
B1 Fire Rating

kraft paper products

**molo** design, ltd

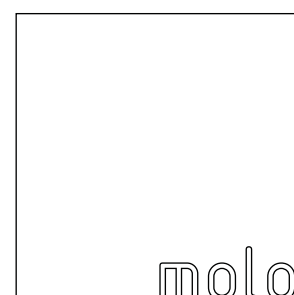
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## **molo kraft paper products B1 fire rating – Germany**

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.

# Test report No. 210475

for applying of a required “Verwendbarkeitsnachweis”  
issued 02.07.2021

**Applicant:** Molo Design Ltd.  
1470 Venables St.  
Vancouver, BC  
V5L 2G7  
Canada

**Date of order:** 14.06.2021  
**Date of sampling:** *no official sampling of the specimen by a representative of Warringtonfire Frankfurt GmbH*  
**Date of arrival:** 17.06.2021  
**Date of test:** 01.07.2021

## Order

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

## Description / designation of the test object

Product name: 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:

Product name: Kraft paper for soft collection

### Product description:

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

Colour: brown Kraft

Gross weight: weight: 120 g/m<sup>2</sup> (paper: 105 g/m<sup>2</sup> + FR 15 g/m<sup>2</sup>) 104 cm roll width

Thickness: 180 μ (±50 μ)

Flame retardant: 100% FSC virgin pulp FR applied by paper manufacturer

Intended end use of the product: interior wall partition and seating  
softwall + softblock + thinwall + softseating + benchwall  
+ cantilever table

### 1.2 By Warringtonfire Frankfurt GmbH determined values:

material: paper

colour: brown

thickness: 0,18 mm

surface weight: 120 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 cross to the production direction:  
 Sample C: Material tested in production direction:  
 Sample D: 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	1
2	<u>flame height max. over lower sample edge</u> time <sup>1)</sup>	cm	80	70	90	90
		min : s	00:10	00:12	00:11	00:10
3	<u>ascertainties on the front side</u> Flaming/glowing time <sup>1)</sup>	min : s	00:02	00:03	00:05	00:04
		min : s	00:07	00:08	00:08	00:05
5	<u>ascertainties on the back side</u> Flaming/glowing time <sup>1)</sup>	min : s	no	no	no	no
		min : s	no	no	no	no
6	discolouring time <sup>1)</sup>	min : s	no	no	no	no
		min : s	no	no	no	no
7	<u>burning droplets</u> begin <sup>1)</sup> extent	min : s	no	no	no	no
		min : s	no	no	no	no
8	occasional dropping of material	min : s	no	no	no	no
		min : s	no	no	no	no
9	constant dropping of material	min : s	no	no	no	no
		min : s	no	no	no	no
10	<u>separating from burning sample parts</u> begin <sup>1)</sup>	min : s	no	no	no	no
		min : s	no	no	no	no
11	occasional separating parts	min : s	no	no	no	no
		min : s	no	no	no	no
12	constant separating parts	min : s	no	no	no	no
		min : s	no	no	no	no
13	duration of burning on the sieve tray (max.)	min : s	no	no	no	no
		min : s	no	no	no	no
14	influence on the burner flame by dropping of / separating material time <sup>1)</sup>	min : s	no	no	no	no
		min : s	no	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	no
		min : s	no	no	no	no
16	time of a possible resulted test stop <sup>1)</sup>	min : s	no	no	no	no
		min : s	no	no	no	no

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

Test results of the Brandschacht tests part 2						
line no.			Measurements test sample			
			A	B	C	D
17	<u>flaming after end of test</u> duration	min : s	no	no	no	no
18	number of sample		no	no	no	no
19	front side of sample	cm	no	no	no	no
20	backside of sample		no	no	no	no
21	flame length		no	no	no	no
22	<u>glowing after end of test</u> duration	min . s	--/--	--/--	--/--	--/--
23	number of sample		no	no	no	no
	place of occurrence		no	no	no	no
24	lower sample part		no	no	no	no
25	upper sample part		no	no	no	no
26	front side of sample		no	no	no	no
27	backside of sample		no	no	no	no
28	<u>smoke density</u> < 400 % x min		4	7	4	4
29	> 440 % x min					
30	<u>diagram in annex no.</u>		1	2	3	4
31	<u>residual length</u> single results	cm	26 / 37 44 / 42	33 / 44 51 / 46	30 / 35 25 / 40	13 / 40 40 / 38
32	average of the single results	cm	37	43	32	32
33	photo of the sample on page		5	5	5	5
34	<u>smoke temperature</u> max. of the average results	°C	124	124	130	130
35	time <sup>1)</sup>	min : s	00:12	00:12	00:12	00:11
36	diagram in annex no.		1	2	3	4

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

Remarks: none

2.1.2 Appearance of the specimen after the test:

sample A



sample B



sample C



sample D



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

Length direction

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	3	4	3	4
Max. flame height [mm]	40	40	40	40	50
Time [s]	3	3	3	3	4
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visual impression) <sub>low / moderate / strong</sub>	Moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

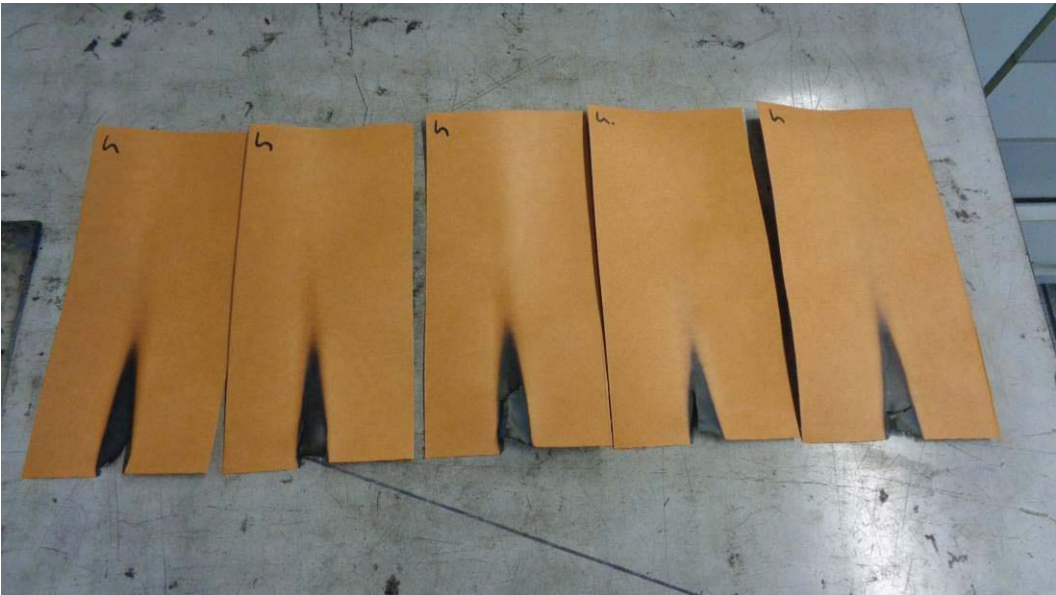
Cross direction

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]	3	3	2	3	4
Max. flame height [mm]	40	40	30	40	40
Time [s]	3	3	2	3	4
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visual impression) <sub>low / moderate / strong</sub>	moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks:



2.2.2 Appearance of the sample after the small burner test:



### 3. Assessment

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

The determined results showed that the material fulfills the requirements

#### for the B1 classification

according to DIN 4102-1 (May 1998).

#### Special note

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

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 02<sup>th</sup> July 2021



R. Reisenauer  
Tester in Charge



P. Scheinkönig  
Prüfstellenleiter Bau-PVO



Deutsche  
Akkreditierungsstelle  
D-PL-18354-01-00

This Test report is valid until 30.06.2026.

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

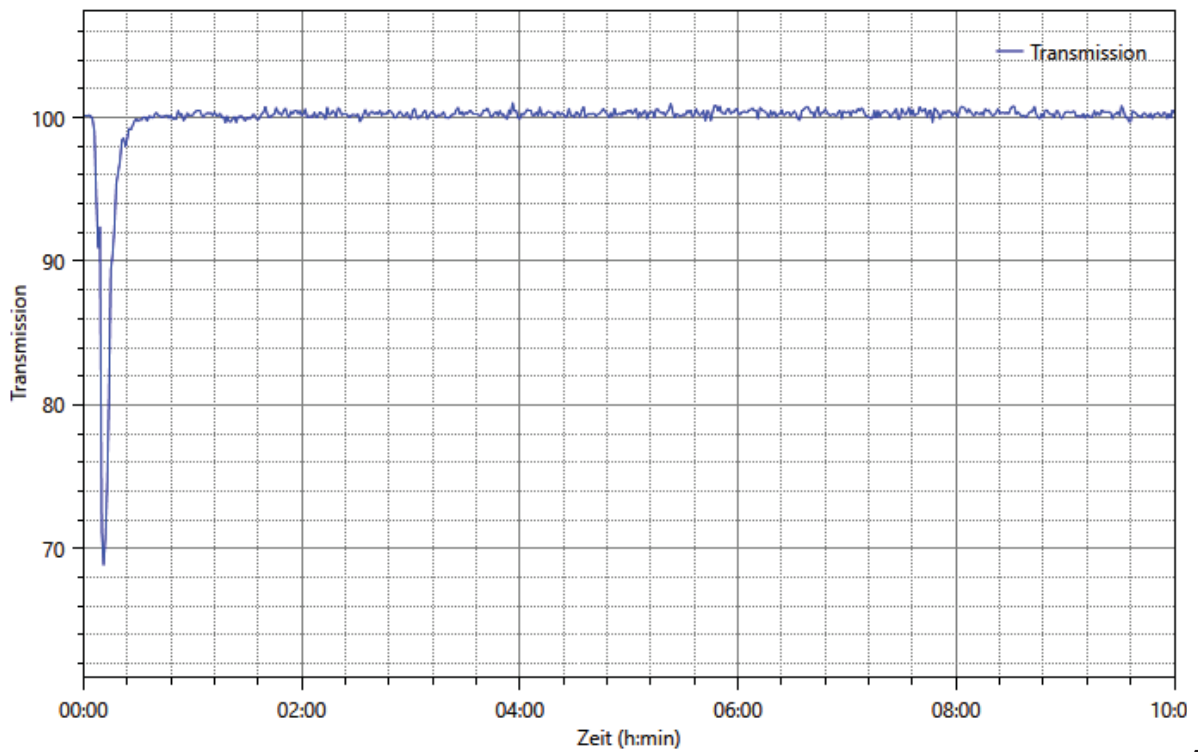
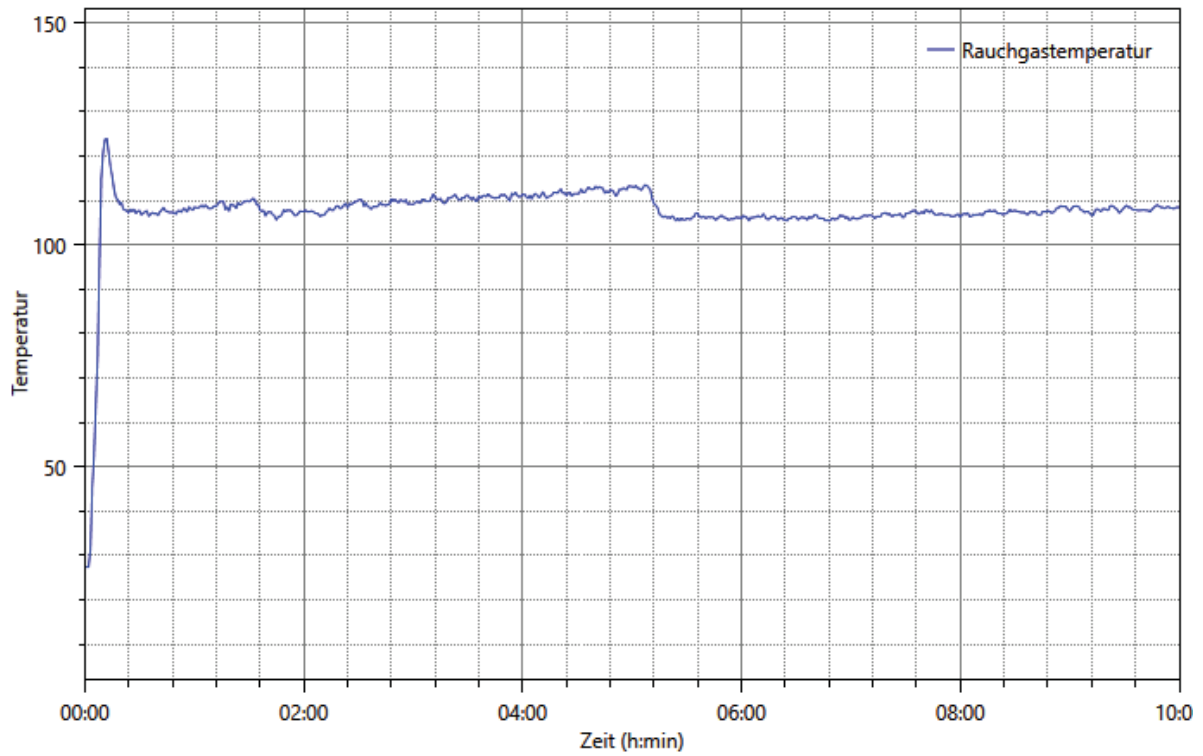
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This test report is a translation of the German version 210475 (issued 02.07.2021). In case of doubt only the German version is valid

This test report contains 8 pages and 4 annexes.

Annex 1 to the Test report No. 210475 issued 02.07.2021

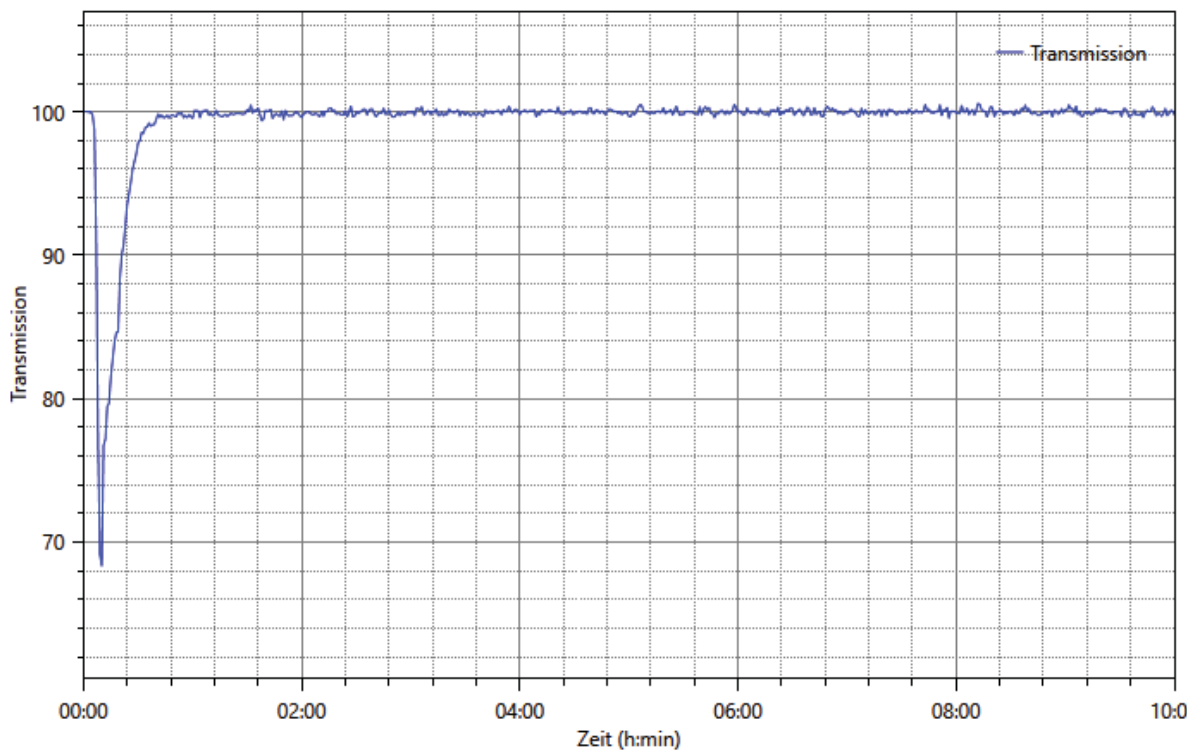
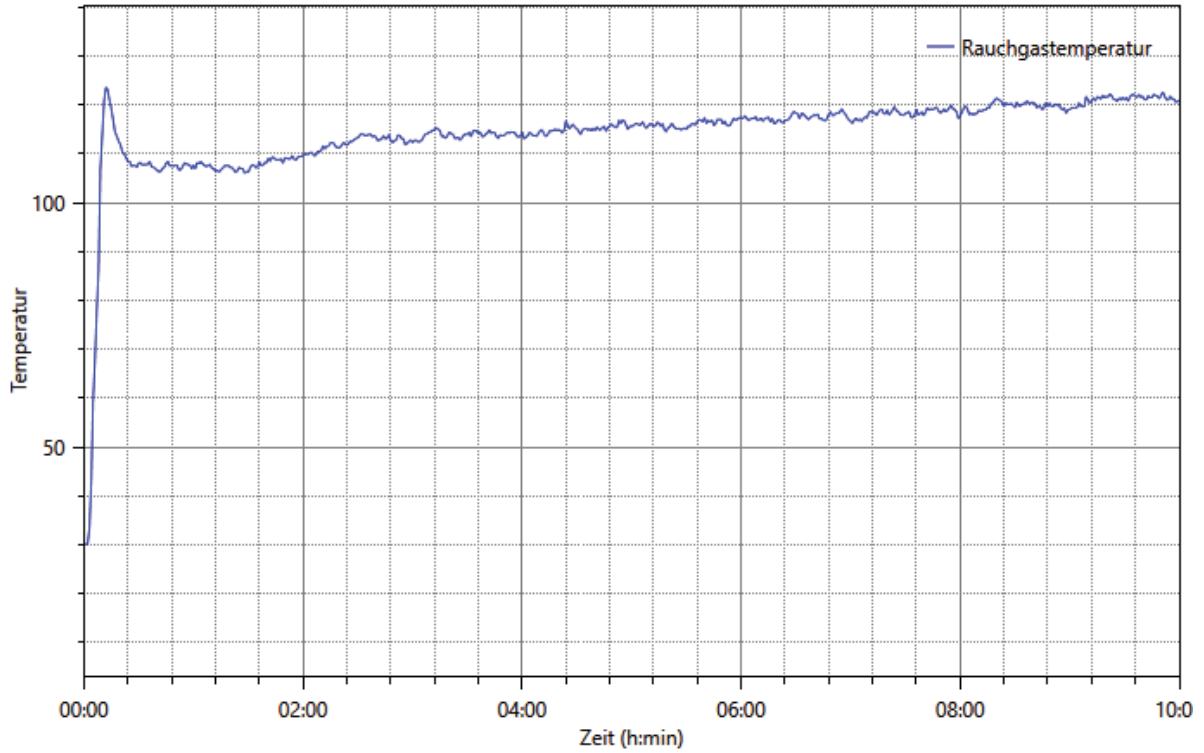
Sample A:



A

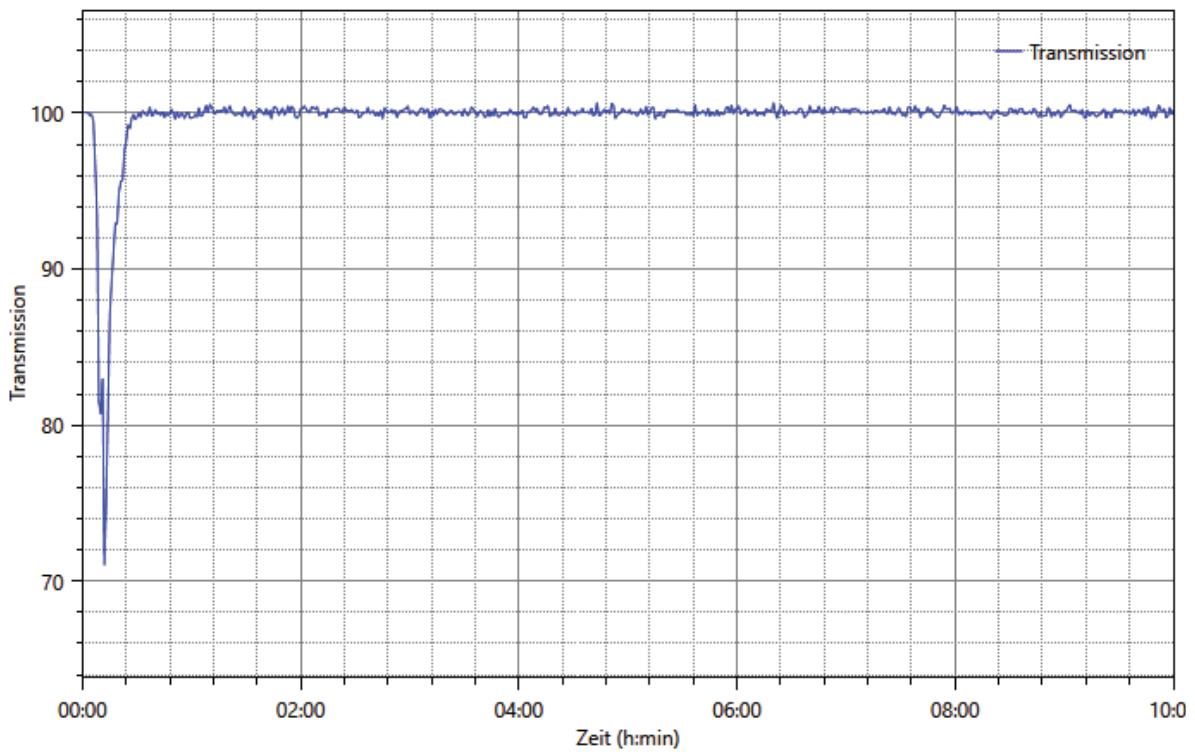
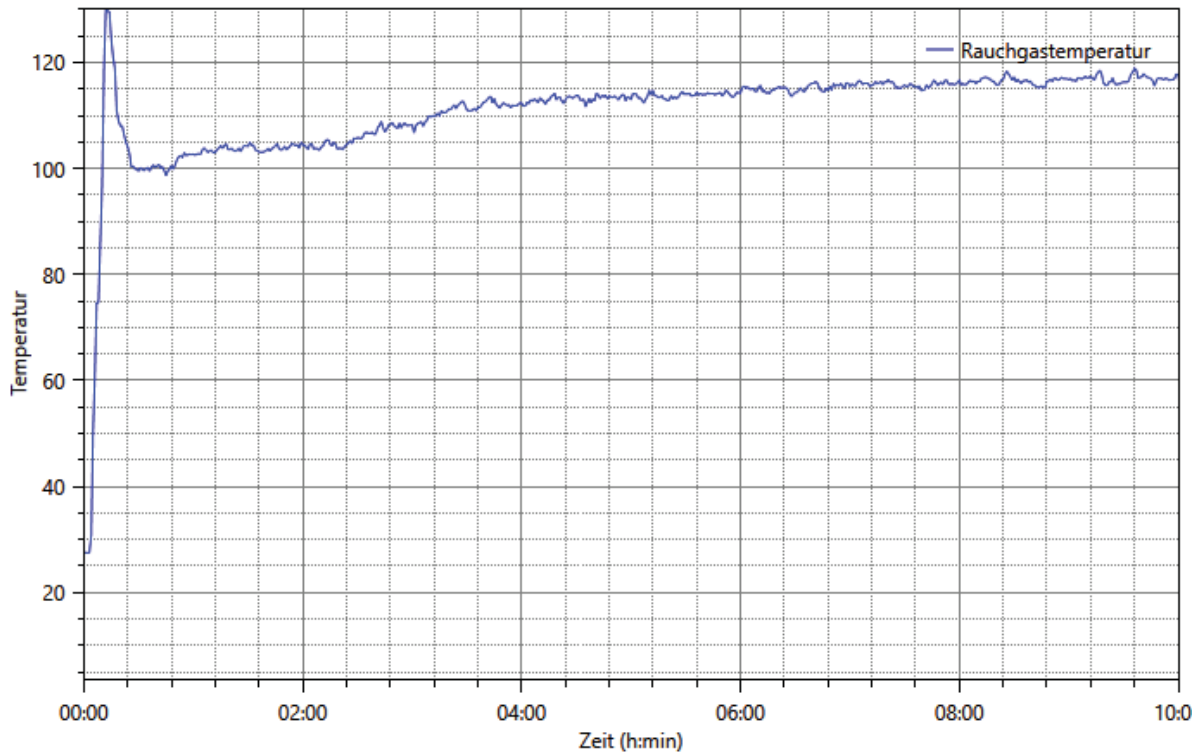
Annex 2 to the Test report No. 210475 issued 02.07.2021

Sample B:



Annex 3 to the Test report No. 210475 issued 02.07.2021

Sample C:



Annex 4 to the Test report No. 210475 issued 02.07.2021

Sample D:

