



Testing. Advising. Assuring.

Test report No. 2014-1827

for applying of a required "Verwendbarkeitsnachweis"
issued 25.07.2014

Applicant:

Dataplot GmbH
Gutenbergstraße 15
24558 Henstedt-Ulzburg

Germany

Date of order:

24.07.2014

Date of sampling:

*no official sampling of the specimen by a representative
of Exova Warringtonfire, Frankfurt*

Date of arrival:

03.06.2013 + 24.06.2013

Date of test:

17.06.2013 + 10.07.2013

Test numbers:

2013-1662 + 2013-1766

Order

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

Description / designation of the test object

Trade name: EMBLEM Solvent POS Film Plus FR - SOPFPFR

Description of the relevant test procedure

DIN 4102 part 1 (Mai 1998)

This test report did 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:

Trade name: EMBLEM Solvent POS Film Plus FR - SOPFPFR
Matchcode: SOPFPFR
Sample material: Hard PVC film
Surface: semimatt
Thickness: 200 μm and 800 μm

1.2 At the specimen preparation by Exova Warringtonfire, Frankfurt determined values:

Sample material: Hard PVC film
Colour: white
Thickness: 0,22 mm und 0,8 mm
Weight per unit area: 320,47 g/m² and 1093 g/m²

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

2. Test results

2.1 Results of the material with the thickness of 200 µm

2.1.1 Brandschachtprüfung according to DIN 4102-1

Sample A: Colour white, Material tested in production direction

Sample B: Colour white, Material tested crosswise to the production direction

Sample C: Colour white, Material tested in production direction

Sample D: Colour white, 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 ¹⁾	cm	100	80	100	100
		min : s	0:25	0:25	0:27	0:21
3	<u>ascertainments on the front side</u> Flaming/glowing time ¹⁾	min : s	0:05	0:04	0:04	0:05
4	<u>melting / burning through</u> time ¹⁾	min : s	0:10	0:08	0:08	0:07
5	<u>ascertainments on the back side</u> Flaming/glowing time ¹⁾	min : s	yes	yes	yes	yes
6	<u>discolouring</u> time ¹⁾	min : s	no	no	no	no
7	<u>burning droplets</u> begin ¹⁾	min : s	not occurred	not occurred	not occurred	not occurred
8	extent					
9	occasional dropping of material					
10	<u>separating from burning sample parts</u> begin ¹⁾	min : s	yes	yes	yes	yes
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	not occurred
14	influence on the burner flame by dropping of / separating material time ¹⁾	min : s	yes	yes	yes	yes
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾	min : s	no	no	no	no
16	time of a possible resulted test stop ¹⁾	min : s				

¹⁾ 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>	min : s	0:00	0:00	0:00	0:00
18	duration		--/--	--/--	--/--	--/--
19	number of sample		--/--	--/--	--/--	--/--
20	front side of sample		--/--	--/--	--/--	--/--
21	backside of sample	cm	--/--	--/--	--/--	--/--
21	flame length		--/--	--/--	--/--	--/--
22	<u>glowing after end of test</u>	min . s	0:00	0:00	0:00	0:00
23	duration		--/--	--/--	--/--	--/--
23	number of sample		--/--	--/--	--/--	--/--
24	place of occurrence		--/--	--/--	--/--	--/--
25	lower sample part		--/--	--/--	--/--	--/--
26	upper sample part		--/--	--/--	--/--	--/--
27	front side of sample		--/--	--/--	--/--	--/--
28	<u>smoke density</u>					
29	< 400 % x min		22	33	25	22
30	> 440 % x min		--/--	--/--	--/--	--/--
30	diagram in annex no.		1	2	3	4
31	<u>residual length</u>	cm				
31	single results		43 / 34 17 / 37	37 / 30 38 / 35	15 / 26 21 / 20	24 / 23 30 / 23
32	average of the single results	cm	32	35	20	25
33	foto of the sample on page		5	5	5	5
34	<u>smoke temperature</u>	°C				
35	max. of the average results		160	137	171	165
36	time ¹⁾		0:24	0:31	0:24	0:30
36	diagram in annex no.		1	2	3	4

¹⁾ time from start of test

Remarks: none

2.1.2 Appearance of the specimen after the test:

Probe A



Probe B



Probe C



Probe D



2.1.3 Normal flammability test according to DIN 4102-1

Test results of the material with 200 µm thickness

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]	10	11	11	19	17
Max. flame height [mm]	50	60	60	100	80
Time [s]	6	6	6	17	14
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	strong smoke production				
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]	9	8	11	8	8
Max. flame height [mm]	50	50	50	50	50
Time [s]	5	5	5	5	5
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	strong smoke production				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.1.4 Appearance of the sample after the small burner test:



2.2 Results of the material with the thickness of 800 µm

2.2.1 Brandschachtprüfung according to DIN 4102-1

Sample A: Colour white, Material tested in production direction

Sample B: Colour white, Material crosswise to the 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		
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	60	60		
		min : s	0:25	0:40		
3	<u>ascertainments on the front side</u> Flaming/glowing time ¹⁾	min : s	0:09	0:18		
4	<u>melting / burning through</u> time ¹⁾	min : s	0:20	0:23		
5	<u>ascertainments on the back side</u> Flaming/glowing time ¹⁾	min : s	no	no		
6	<u>discolouring</u> time ¹⁾	min : s	no	no		
7	<u>burning droplets</u> begin ¹⁾	min : s	not occured	not occured		
8	extent					
9	occasional dropping of material constant dropping of material					
10	<u>separating from burning sample parts</u> begin ¹⁾	min : s	not occured	not occured		
11	occasional separating parts					
12	constant separating parts					
13	duration of burning on the sieve tray (max.)	min : s	not occured	not occured		
14	influence on the burner flame by dropping of / separating material time ¹⁾	min : s	no	no		
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾	min : s	no	no		
16	time of a possible resulted test stop ¹⁾	min : s				

1) time of 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>	min : s	0:00	0:00		
18	duration		--/--	--/--		
19	number of sample		--/--	--/--		
20	front side of sample		--/--	--/--		
21	backside of sample	cm	--/--	--/--		
21	flame length		--/--	--/--		
22	<u>glowing after end of test</u>	min . s	0:00	0:00		
23	duration		--/--	--/--		
23	number of sample		--/--	--/--		
24	place of occurrence		--/--	--/--		
25	lower sample part		--/--	--/--		
26	upper sample part		--/--	--/--		
27	front side of sample		--/--	--/--		
28	<u>smoke density</u>					
29	< 400 % x min		39	32		
30	> 440 % x min		--/--	--/--		
30	diagram in annex no.		5	6		
31	<u>residual length</u>	cm				
32	single results		59 / 47	66 / 49		
33	average of the single results		56 / 52	58 / 58		
33	foto of the sample on page		53	57		
34	<u>smoke temperature</u>	°C				
35	max. of the average results		117	117		
36	time ¹⁾		5:44	8:20		
36	diagram in annex no.		5	6		

1) time of start of test

Remarks: Due to an average value of the residual lengths of > 45 cm more tests could have been relinquished.

2.2.2 Appearance of the samples after the test

Sample A



Sample B



2.2.3 Normal flammability test according to DIN 4102-1

Test results of the material with 800 µm thickness

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]	15	15	15	15	15
Max. flame height [mm]	50	40	50	40	50
Time [s]	10	8	10	8	9
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	strong production				
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]	15	15	15	15	15
Max. flame height [mm]	40	50	40	40	50
Time [s]	10	10	10	10	10
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	strong production				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.4 Appearance of the samples 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 test results show that the material also fulfils the requirements

of the building class B1

according to DIN 4102-1 (Mai 1998).

4. Special comment

The fire test result is only valid for the in chapter one described material in the tested colour tested colour "white", a surface weight of 320 g/m² to 1093 g m² and the thickness of 200 µm to 800 µm, in freely suspended arrangement.

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 did not replace the required „Verwendbarkeitsnachweis“. It is only used for issuing the „Verwendbarkeitsnachweis“.

Frankfurt, the 29.07.2014

A handwritten signature in blue ink, appearing to read "Anders".

H. Anders
Tester in charge

A handwritten signature in blue ink, appearing to read "Zachäus".

Dipl.-Ing. T. Zachäus
Laboratory supervisor

This test report is valid until 16.06.2018.

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 2014-1827 (issued 25.07.2014). In case of doubt only the German version is valid

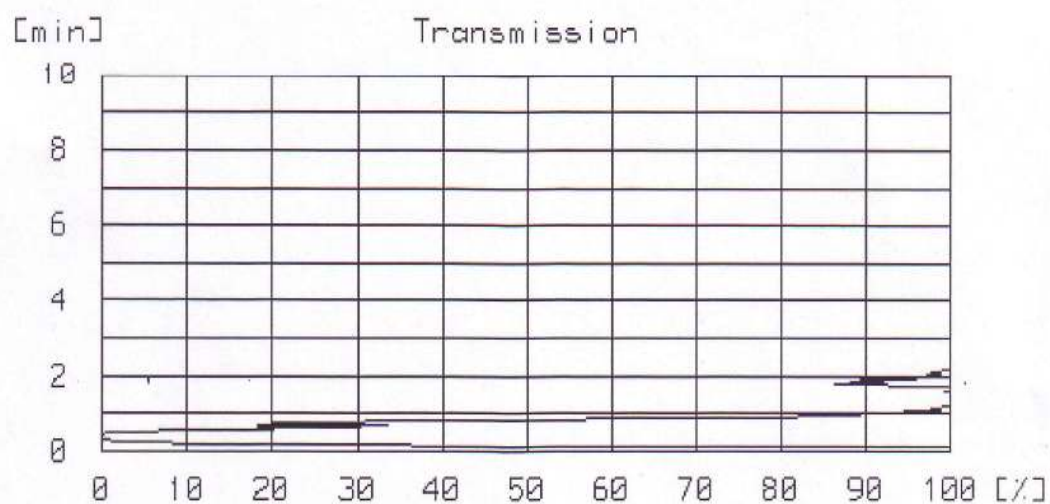
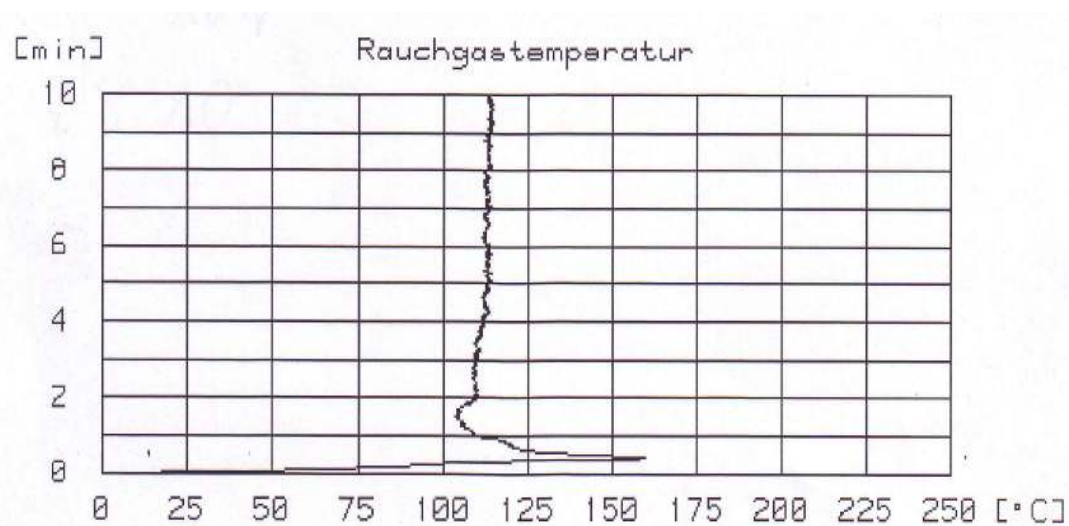
This test report contains 13 pages and 6 annexes.

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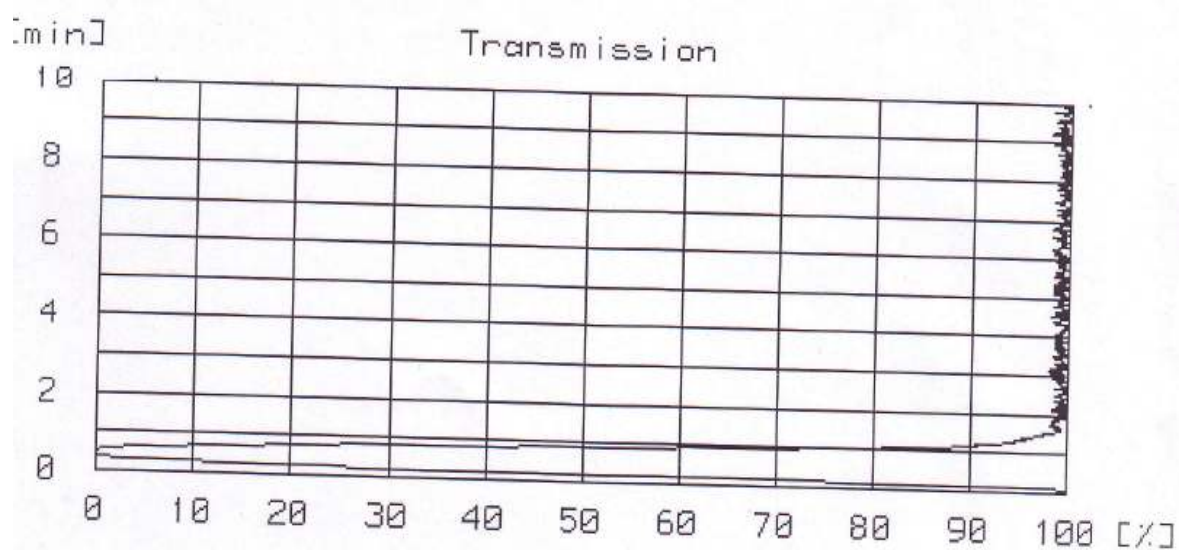
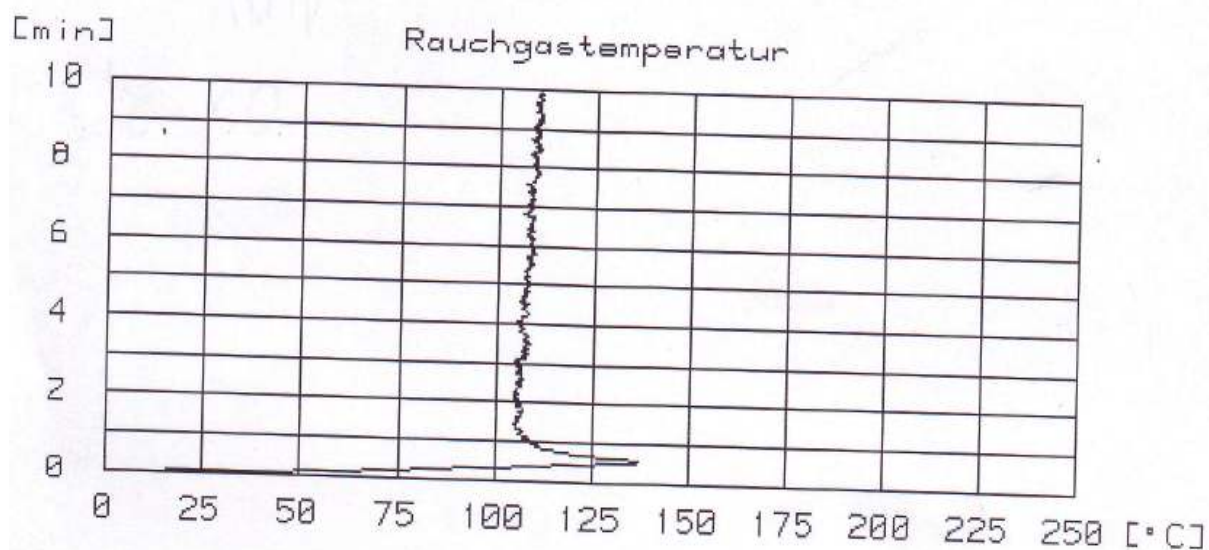
Annex 1 to the Test report No. 2014-1827 issued 25.07.2014

Material with the thickness of 200 μm

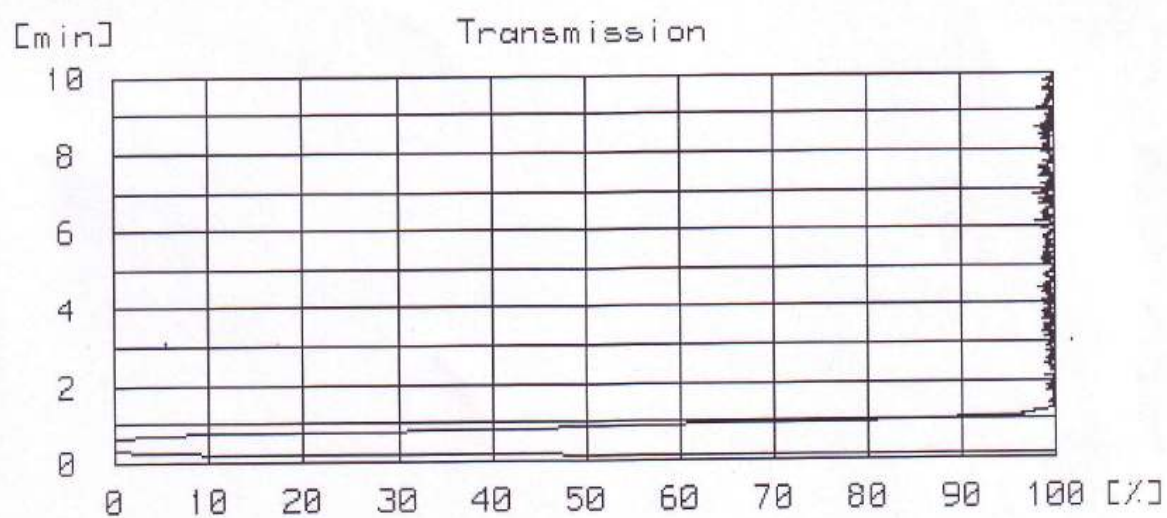
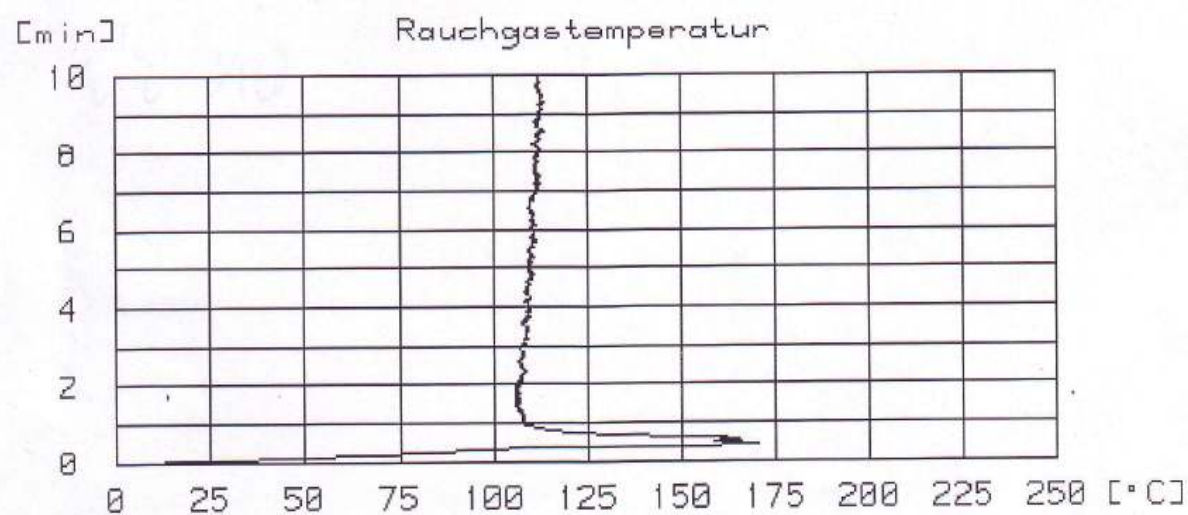
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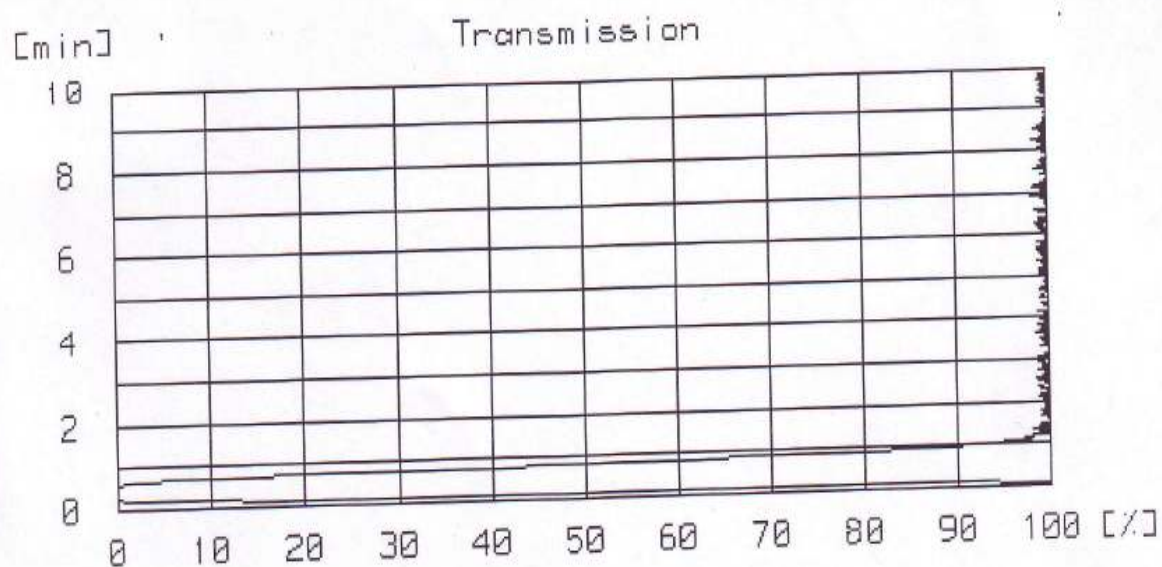
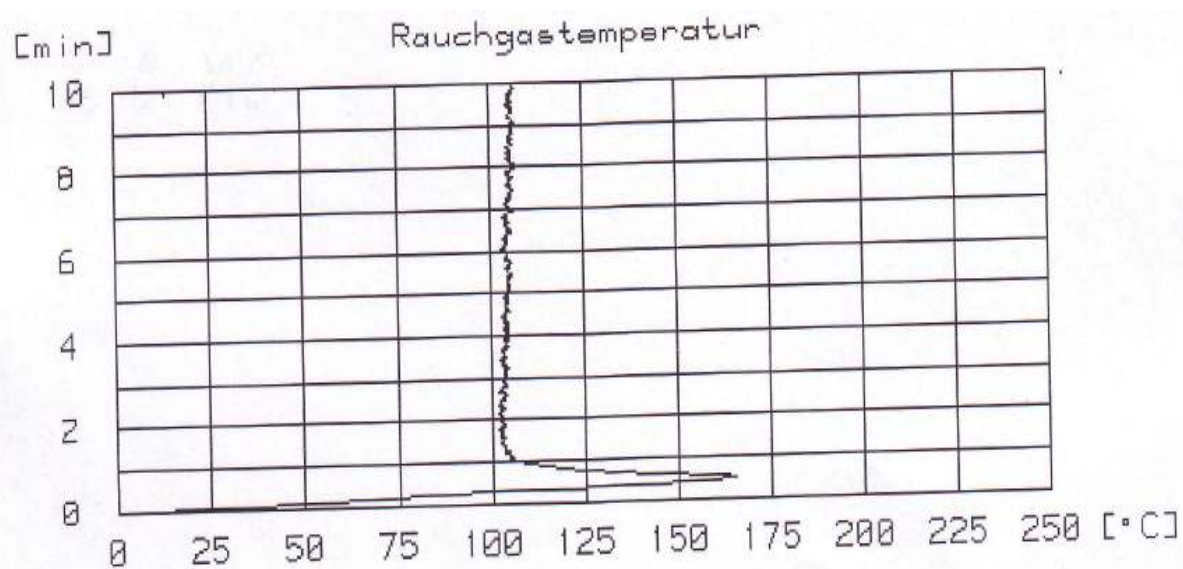
Sample B:



Sample C:



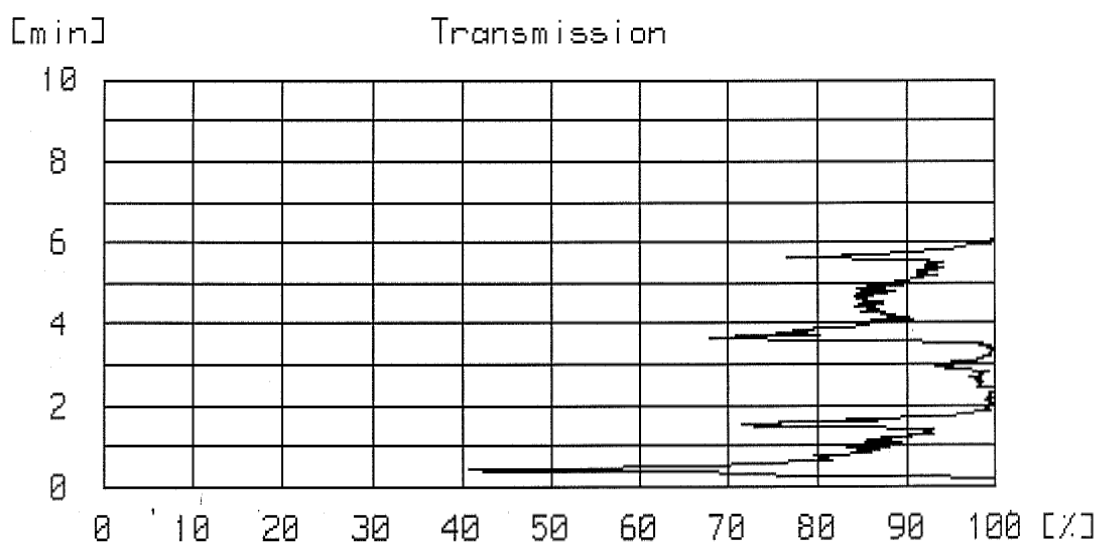
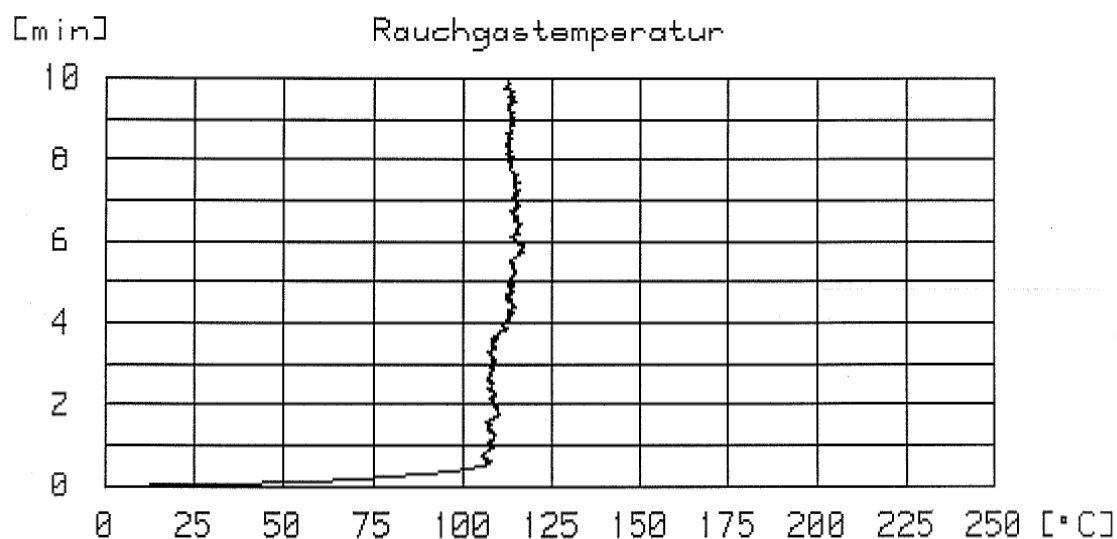
Sample D:



Annex 5 to the Test report No. 2014-1827 issued 25.07.2014

Material with the thickness of 800 μm

Probe A:



Annex 6 to the Test report No. 2014-1827 issued 25.07.2014

Sample B:

