



Testing. Advising. Assuring.

Test report No. 2015-2115

for applying of a required "Verwendbarkeitsnachweis"
issued 13.01.2016

Applicant: Aristech Surfaces LLC
7350 Empire Drive

Florence, KY 41042

Date of order: 02.10.2015
Date of sampling: *no official sampling of the specimen by a representative of Exova Warringtonfire, Frankfurt*
Date of arrival: 04.11.2015
Date of test: 19.11.2015; 25.11.2015 und 05.01.2016

Order

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

Description / designation of the test object

Product Name: Avonite Surfaces Foundations F1-8240 Eclipse; F1-8264 Crimson;
F1-8016 White

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:

Product Name: Avonite Surfaces Foundations F1-8240 Eclipse; F1-8264 Crimson; F1-8016 White

Material type: Acrylic Solid Surface

Color: Black, Red, White

Thickness: 12 mm

Squaure weight: 20.8 kg/m²

Intended end use of product: Interior Walls, countertops, sinks

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

Plastic Panel I

Colour:	black	red	white
Thickness:	11,6 mm	11,6 mm	12,18 mm
Square weight:	20,24 kg/m ²	19,73 kg/m ²	21,174 kg/m ²

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 (F1-8240 Eclipse, black)
 Sample B: Material tested in production direction (F1-8240 Eclipse, black)
 Sample C: Material tested in production direction (F1-8240 Eclipse, black)

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			A	B	C	
1	<u>no. test arrangement according to DIN 4102 part 15, table 1</u>		2	2	2	
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	100	100	100	
		min : s	0:26	1:02	1:02	
3	<u>ascertainments on the front side</u> Flaming/glowing time ¹⁾	min : s	2:18	1:55	2:03	
4	<u>melting / burning through</u> time ¹⁾	min : s	not occurred	not occurred	not occurred	
5	<u>ascertainments on the back side</u> Flaming/glowing time ¹⁾ discolouring time ¹⁾	min : s	no	no	no	
6		min : s	no	no	no	
7	<u>burning droplets</u> begin ¹⁾ extent occasional dropping of material constant dropping of material	min : s	not occurred	not occurred	not occurred	
8						
9						
10	<u>separating from burning sample parts</u> begin ¹⁾ occasional separating parts constant separating parts	min : s	no	no	no	
11						
12						
13	duration of burning on the sieve tray (max.)	min : s	not occurred	not occurred	not occurred	
14	influence on the burner flame by dropping of / separating material time ¹⁾	min : s	no	no	no	
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾ time of a possible resulted test stop ¹⁾	min : s	no	no	no	
16		min : s				

¹⁾ 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		--/--	--/--	--/--	
	place of occurrence		--/--	--/--	--/--	
24	lower sample part		--/--	--/--	--/--	
25	upper sample part		--/--	--/--	--/--	
26	front side of sample		--/--	--/--	--/--	
27	backside of sample		--/--	--/--	--/--	
28	<u>smoke density</u> < 400 % x min		20	15	18	
29	> 440 % x min		--/--	--/--	--/--	
30	<u>diagram in annex no.</u>		1	1	1	
31	<u>residual length</u> single results	cm	34 / 33 32 / 34	36 / 33 34 / 34	35 / 33 34 / 35	
32	average of the single results	cm	33	34	34	
33	photo of the sample on page		5	5	5	
34	<u>smoke temperature</u> max. of the average results	°C	167	172	171	
35	time ¹⁾	min : s	9:54	9:55	9:53	
36	diagram in annex no.		1	2	3	

¹⁾ time from start of test

Remarks: none

2.1.2 Brandschachtprüfung according to DIN 4102-1

Sample D: Material tested in production direction (F1-8264 Crimson; red)
 Sample E: Material tested in production direction (F1-8264 Crimson; red)
 Sample F: Material tested in production direction (F1-8264 Crimson; red))

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			D	E	F	
1	<u>no. test arrangement according to DIN 4102 part 15, table 1</u>		2	2	2	
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	100	100	100	
		min : s	1:28	1:13	1:16	
3	<u>ascertainties on the front side</u> Flaming/glowing time ¹⁾	min : s	2:07	2:02	2:13	
4	<u>melting / burning through</u> time ¹⁾	min : s	not occured	not occured	not occured	
5	<u>ascertainties on the back side</u> Flaming/glowing time ¹⁾	min : s	no	no	no	
		min : s	no	no	no	
6	discolouring time ¹⁾	min : s	no	no	no	
		min : s	no	no	no	
7	<u>burning droplets</u> begin ¹⁾ extent	min : s	not occured	not occured	not occured	
8	occasional dropping of material					
9	constant dropping of material					
10	<u>separating from burning sample parts</u> begin ¹⁾	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 occured	not occured	not occured	
14	<u>influence on the burner flame by dropping of / separating material</u> time ¹⁾	min : s	no	no	no	
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾	min : s	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				
			D	E	F	
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		--/--	--/--	--/--	
	place of occurrence		--/--	--/--	--/--	
24	lower sample part		--/--	--/--	--/--	
25	upper sample part		--/--	--/--	--/--	
26	front side of sample		--/--	--/--	--/--	
27	backside of sample		--/--	--/--	--/--	
28	<u>smoke density</u> < 400 % x min		10	15	20	
29	> 440 % x min		--/--	--/--	--/--	
30	<u>diagram in annex no.</u>		1	1	1	
31	<u>residual length</u> single results	cm	31 / 32 33 / 33	31 / 32 30 / 31	33 / 31 32 / 32	
32	average of the single results	cm	32	31	32	
33	photo of the sample on page		5	5	5	
34	<u>smoke temperature</u> max. of the average results	°C min : s	179	174	179	
35	time ¹⁾		9:55	9:49	9:54	
36	<u>diagram in annex no.</u>		4	5	6	

¹⁾ time from start of test

Remarks: none

2.1.3 Brandschachtprüfung according to DIN 4102-1

Sample G: Material tested in production direction (F1-8016 White; white)
 Sample H: Material tested in production direction (F1-8016 White; white)
 Sample I: Material tested in production direction (F1-8016 White; white)

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			G	H	I	
1	<u>no. test arrangement according to DIN 4102 part 15, table 1</u>		2	2	2	
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	90	90	90	
		min : s	0:15	0:21	0:18	
3	<u>ascertainties on the front side</u> Flaming/glowing time ¹⁾	min : s	2:25	2:41	2:32	
4	<u>melting / burning through</u> time ¹⁾	min : s	not occurred	not occurred	not occurred	
5	<u>ascertainties on the back side</u> Flaming/glowing time ¹⁾ discolouring time ¹⁾	min : s	no	no	no	
6		min : s	no	no	no	
7	<u>burning droplets</u> begin ¹⁾ extent occasional dropping of material constant dropping of material	min : s	not occurred	not occurred	not occurred	
8						
9						
10	<u>separating from burning sample parts</u> begin ¹⁾ occasional separating parts constant separating parts	min : s	no	no	no	
11						
12						
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 ¹⁾	min : s	no	no	no	
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾ time of a possible resulted test stop ¹⁾	min : s	no	no	no	
16		min : s				

¹⁾ time from start of test

Test results of the Brandschacht tests part 2						
line no.		Measurements test sample				
			G	H	I	
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		--/--	--/--	--/--	
	place of occurrence		--/--	--/--	--/--	
24	lower sample part		--/--	--/--	--/--	
25	upper sample part		--/--	--/--	--/--	
26	front side of sample		--/--	--/--	--/--	
27	backside of sample		--/--	--/--	--/--	
28	<u>smoke density</u> < 400 % x min		18	30	18	
29	> 440 % x min		--/--	--/--	--/--	
30	<u>diagram in annex no.</u>		1	1	1	
31	<u>residual length</u> single results	cm	39 / 37 37 / 39	37 / 35 37 / 35	38 / 37 37 / 38	
32	average of the single results	cm	38	36	37	
33	photo of the sample on page		5	5	5	
34	<u>smoke temperature</u> max. of the average results	°C	146	160	159	
35	time ¹⁾	min : s	9:53	9:54	9:47	
36	diagram in annex no.		7	8	9	

¹⁾ time from start of test

Remarks: none

2.1.4 Appearance of the specimen after the test:



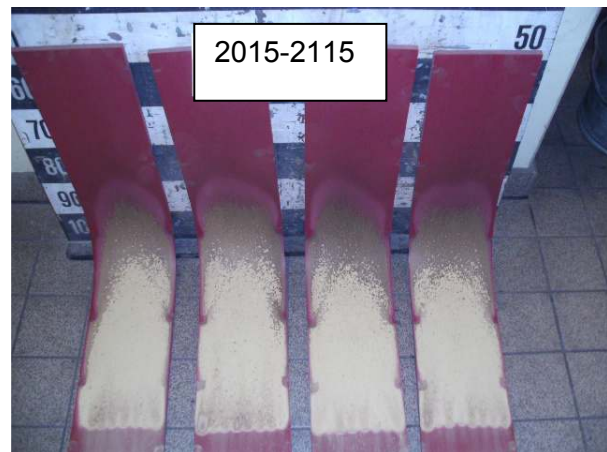
Sample A



Sample B

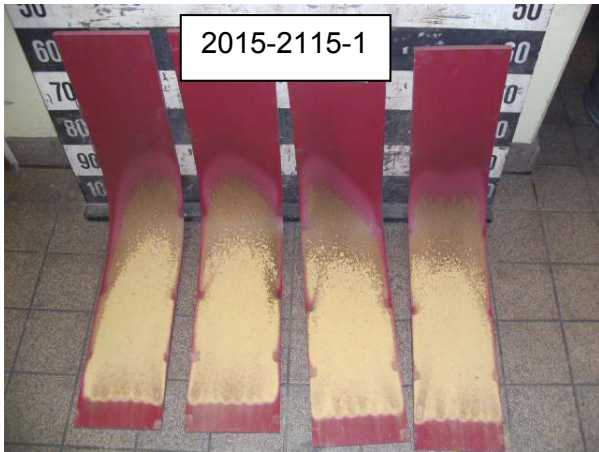


Sample C

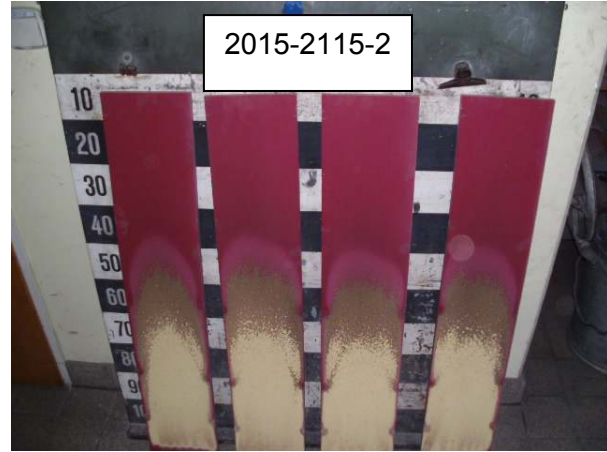


Probe D

2.1.5 Appearance of the specimen after the test:



Sample E



Sample F



Sample G



Probe H

Testing. Advising. Assuring.

Test report No. 2015-2115 issued 13.01.2016

page 11 of 16

2.1.6 Appearance of the specimen after the test:



Sample I

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

(F1-8240 Eclipse, black)

Sample-no.	1	2	3	4	5
Time from start of test					
Ignition point [s]	4	4	4	4	4
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]	30	30	30	30	30
Time [s]	5	5	5	5	5
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	low smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

(F1-8264 Crimson; red)

Sample-no.	1	2	3	4	5
Time from start of test					
Ignition point [s]	4	4	4	4	4
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	40	50	50	40
Time [s]	7	7	10	9	8
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	low smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.2 Normal flammability test according to DIN 4102-1

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

(F1-8016 White; white)

Sample-no.	1	2	3	4	5
Time from start of test					
Ignition point [s]	-	-	-	-	-
Reaching the measuring mark within 20 seconds	no	no	no	no	no
Self-extinguishing of the flame [s]	-	-	-	-	-
Max. flame height [mm]	10	10	10	10	10
Time [s]	1	1	1	1	1
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	low smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.3 Appearance of the sample after the small burner test:



2.2.4 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 comment

The fire test result is only valid for the in chapter one described material 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.

According to the experiences of the test laboratory the test results also includes colors in between the tested ones.

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 13.01.2016



H. Anders
Tester in Charge



Dipl.-Ing. T. Zachäus
Laboratory supervisor

This Test report is valid until 18.11.2020

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

Test reports are only allowed to be published or reproduced, not changed in form and tenor without permission of the Exova Warringtonfire, Frankfurt. The abridged account of a test report is only allowed with the agreement of the Exova Warringtonfire, Frankfurt.

This test report is a translation of the German version 2015-2115 (issued 13.01.2016). In case of doubt only the German version is valid

Testing. Advising. Assuring.

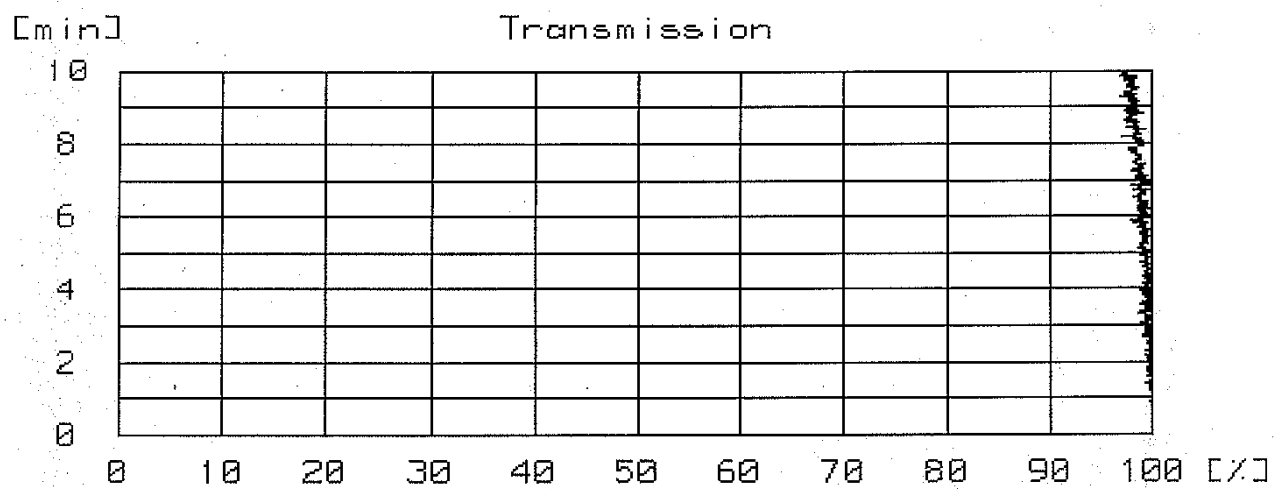
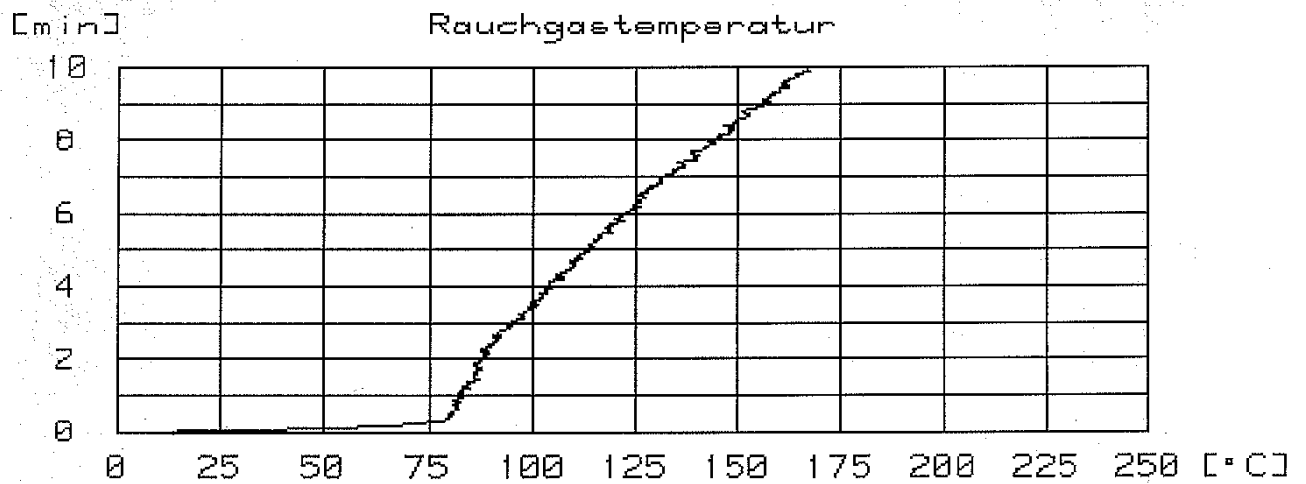
Test report No. 2015-2115 issued 13.01.2016

page 17 of 16

This test report contains 16 pages and 9 annexes.

Annex 1 to the Test report No. 2015-2115 issued 13.01.2016

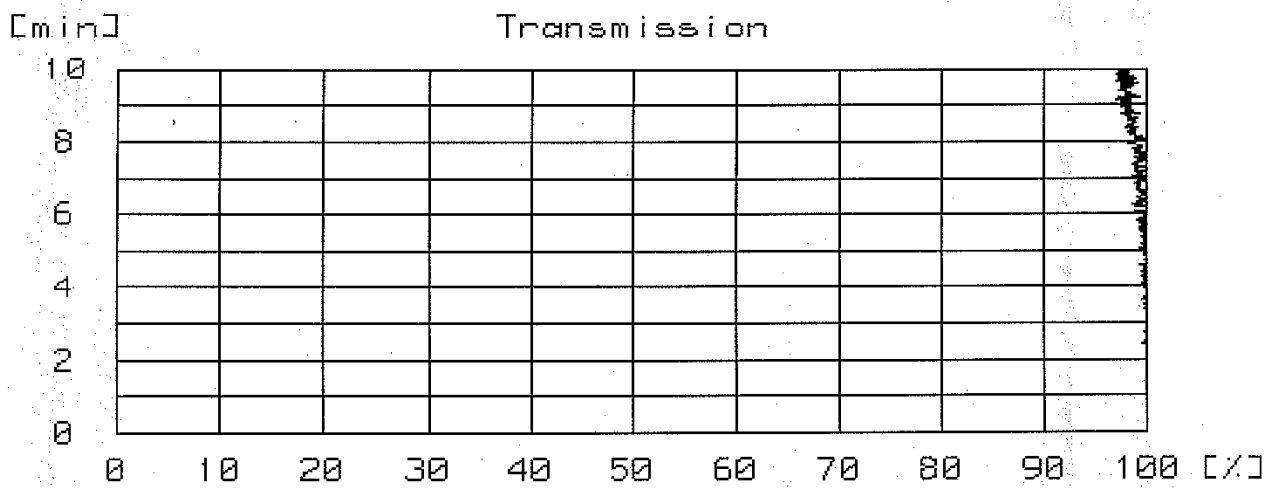
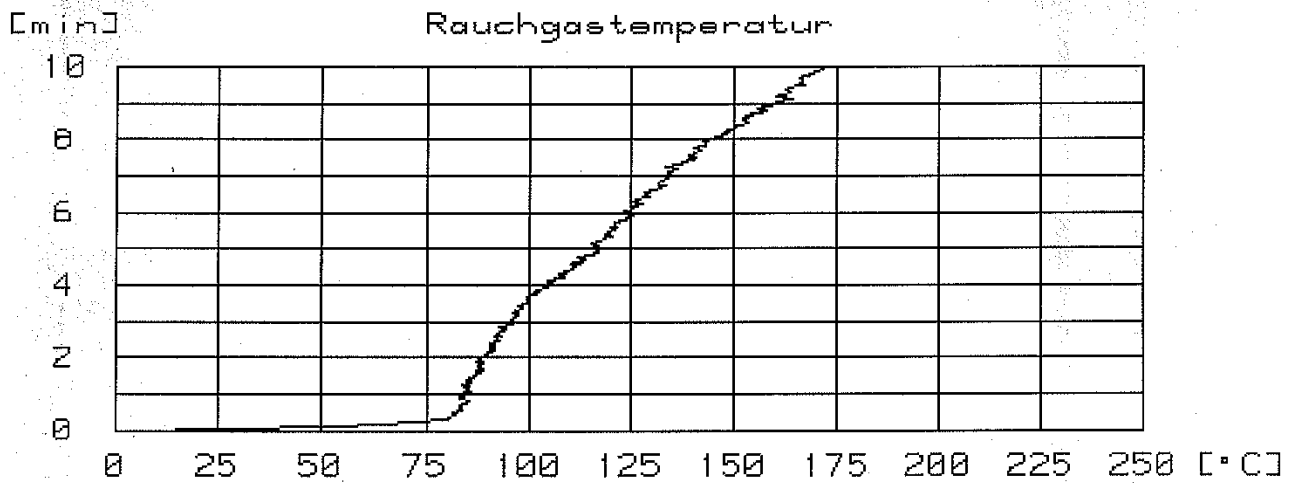
Sample A:



Testing. Advising. Assuring.

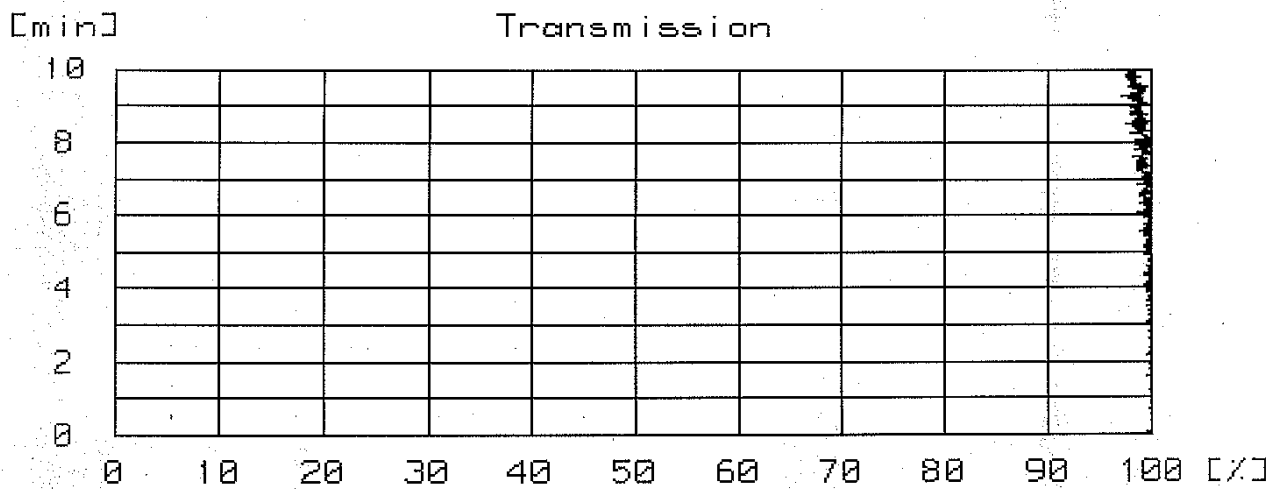
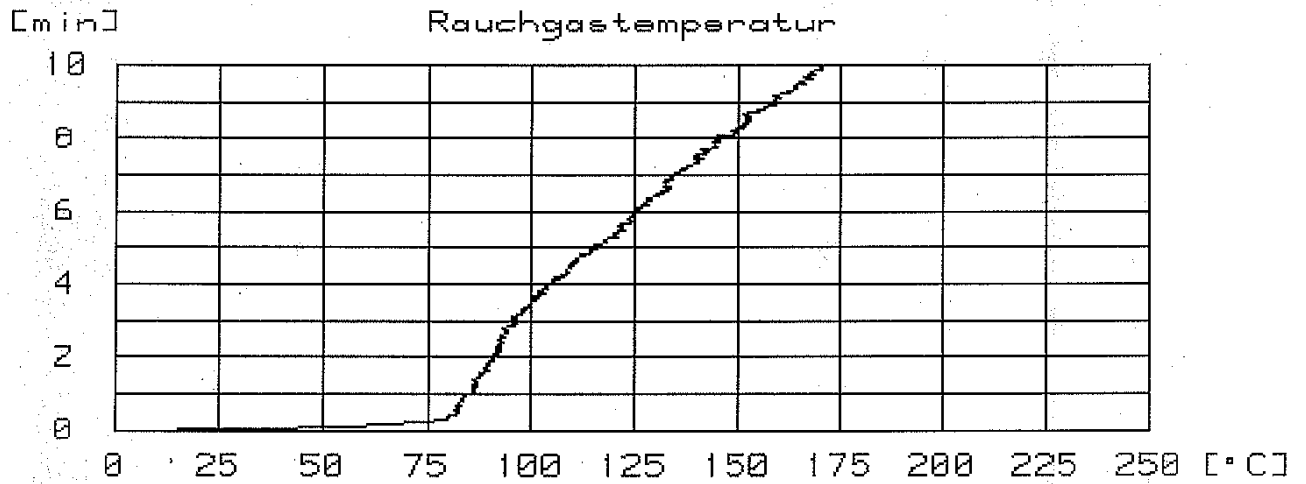
Annex 2 to the Test report No. 2015-2115 issued 13.01.2016

Sample B:



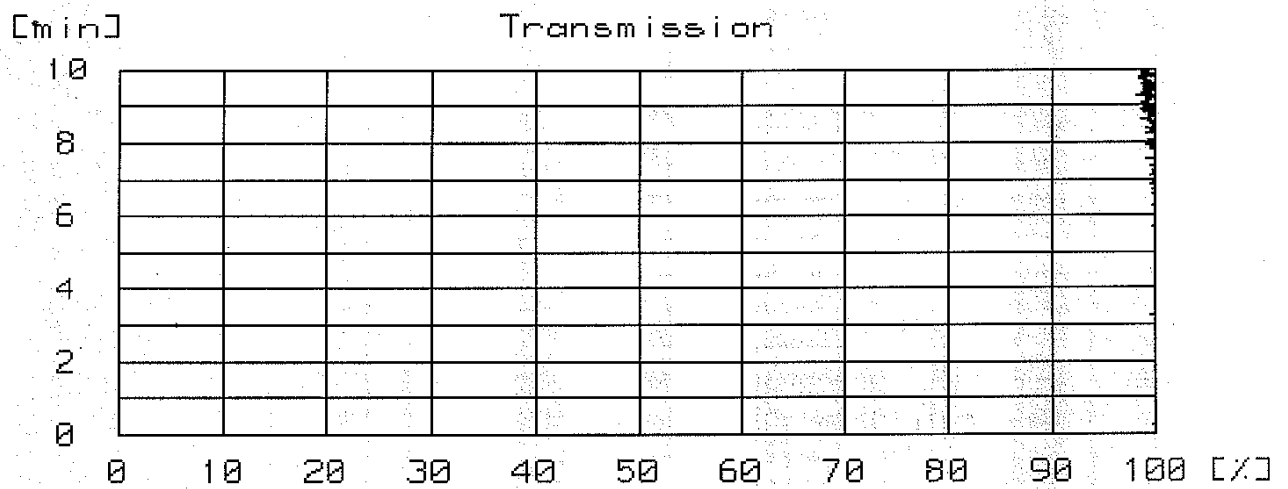
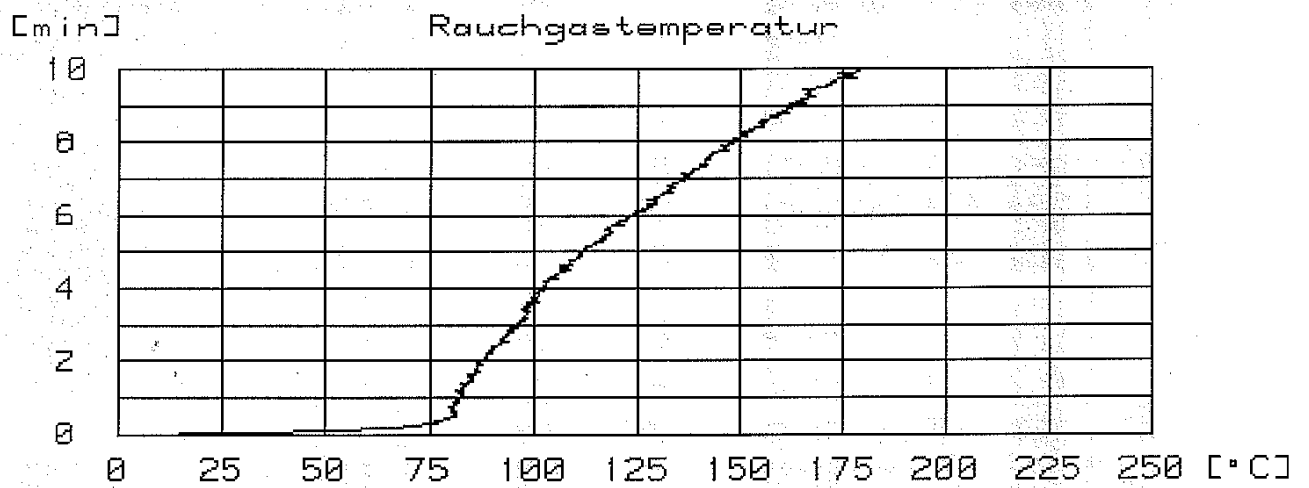
Annex 3 to the Test report No. 2015-2115 issued 13.01.2016

Sample C:



Annex 4 to the Test report No. 2015-2115 issued 13.01.2016

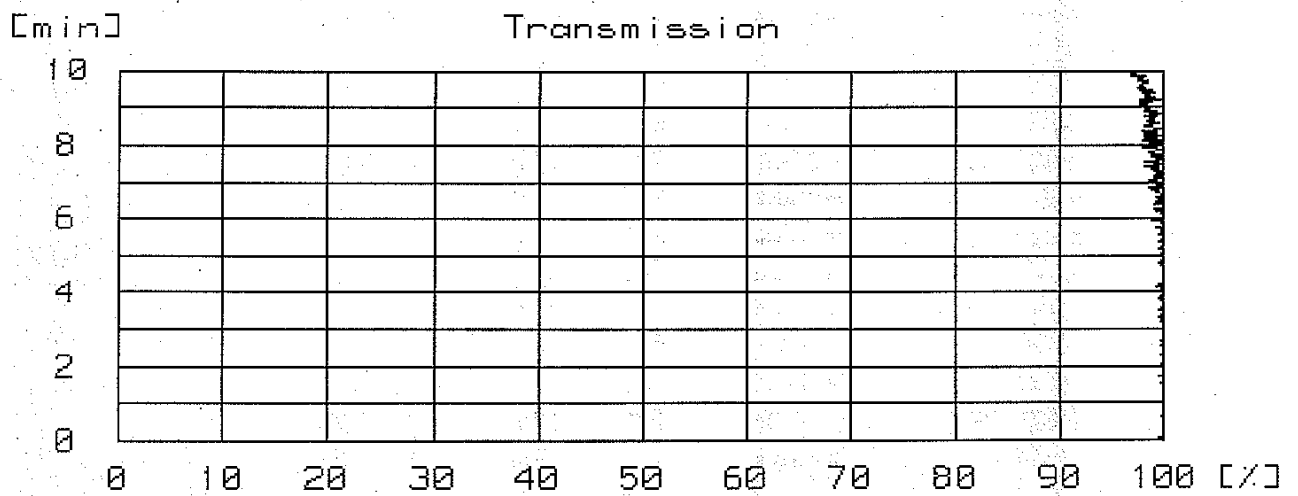
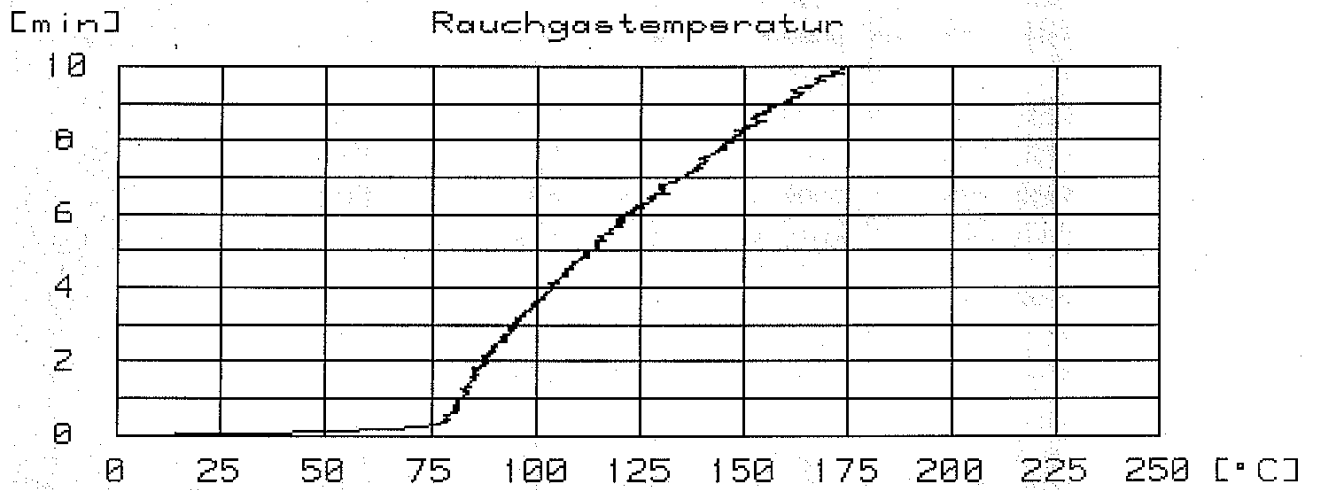
Sample D:



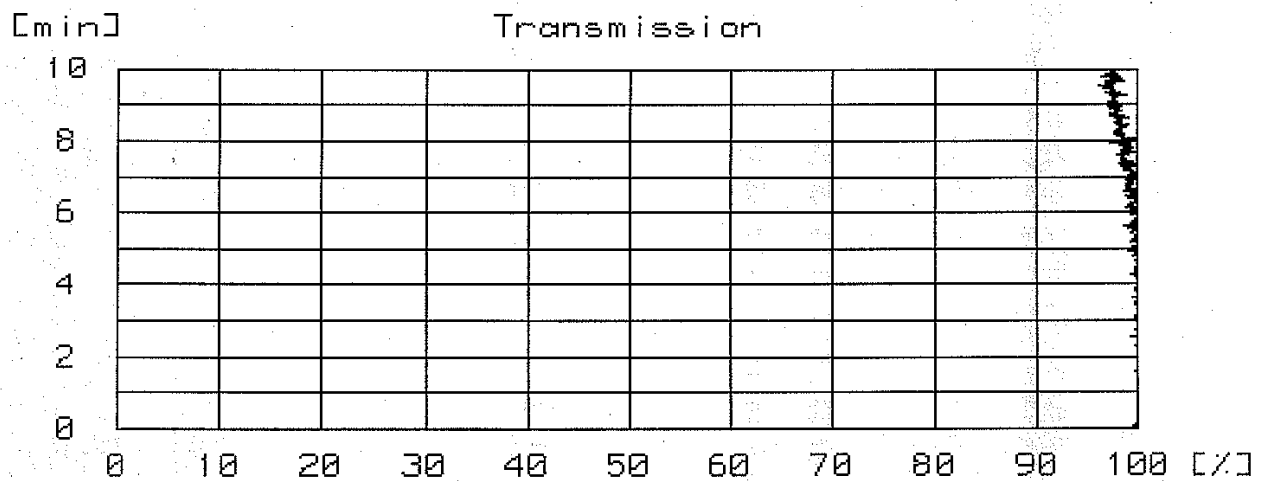
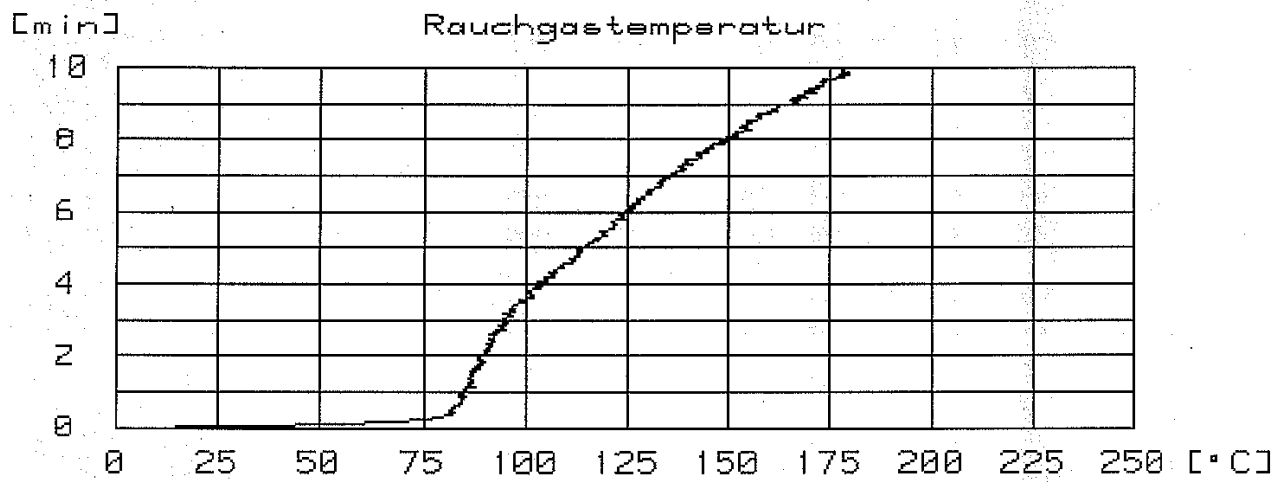
Testing. Advising. Assuring.

Annex 5 to the Test report No. 2015-2115 issued 13.01.2016

Sample E:



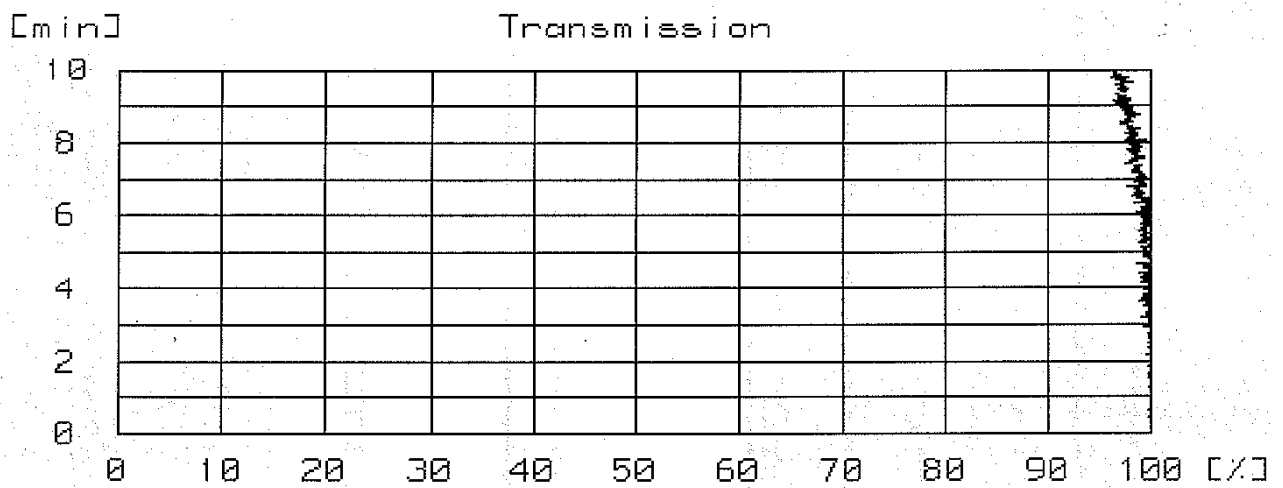
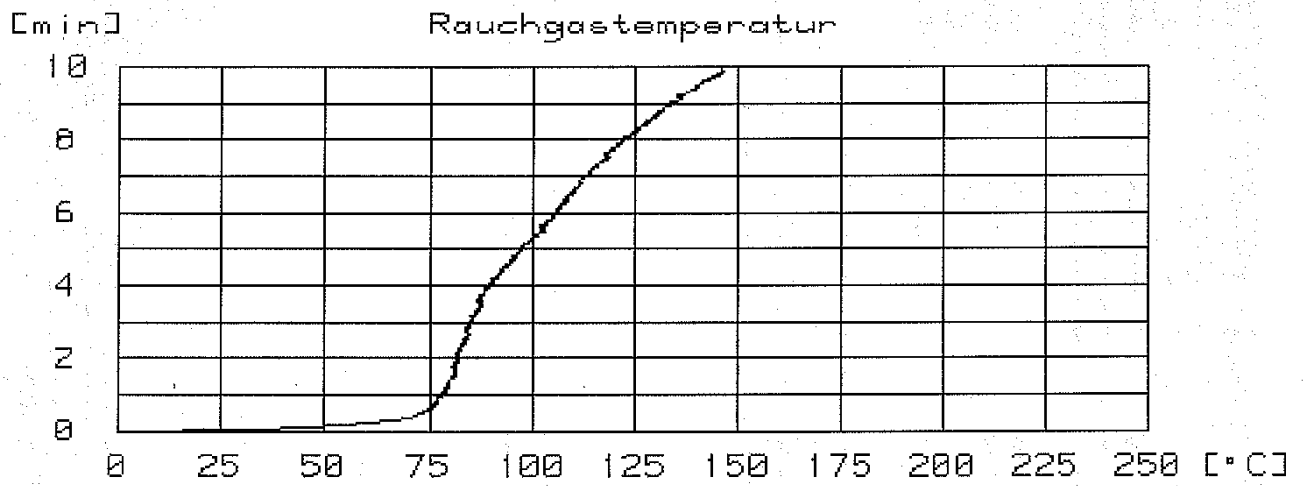
Sample F:



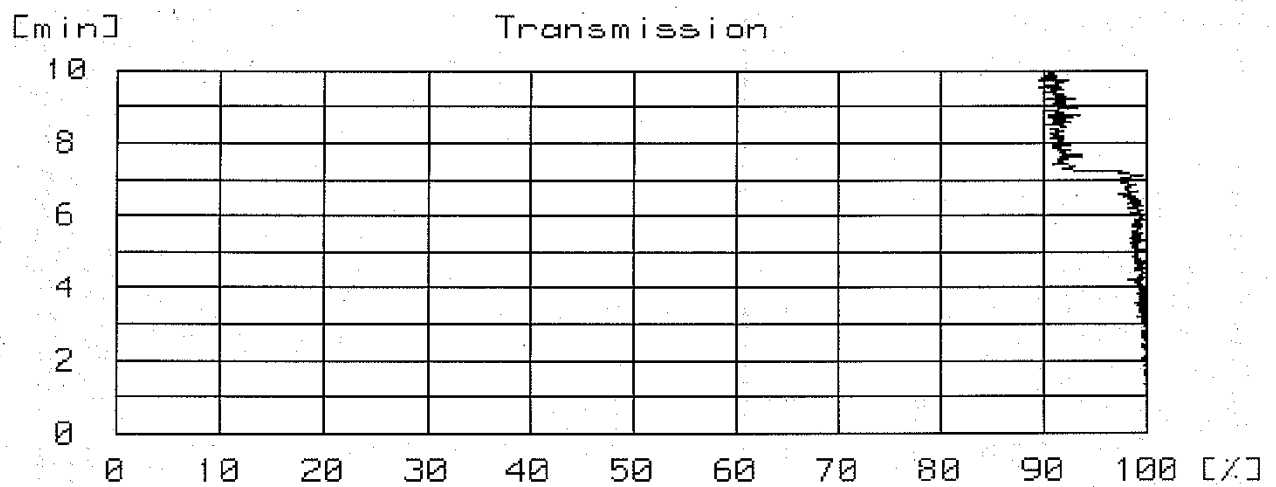
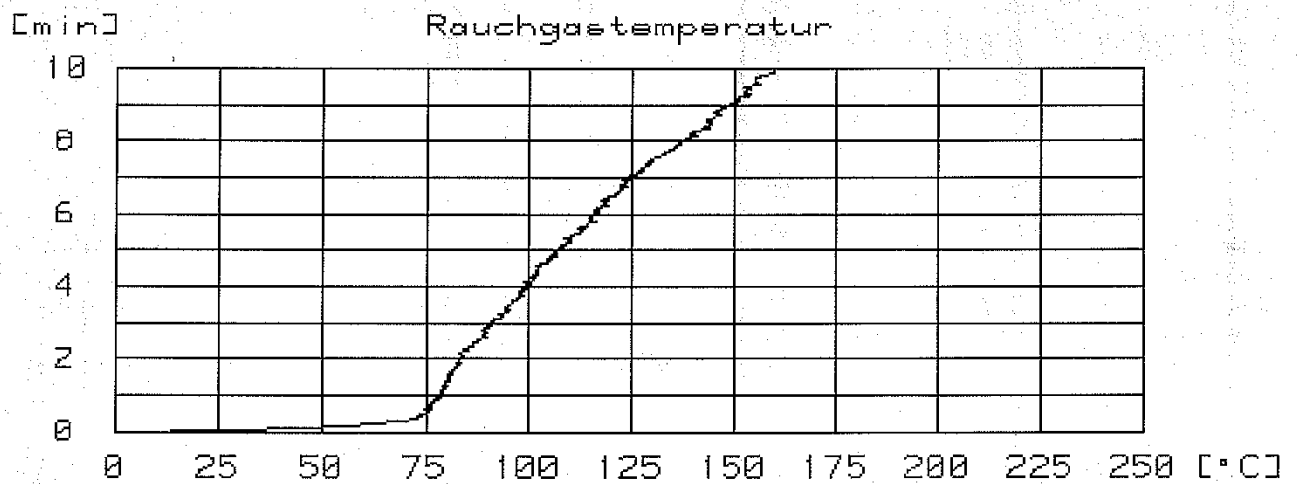
Testing. Advising. Assuring.

Annex 7 to the Test report No. 2015-2115 issued 13.01.2016

Sample G:



Sample H:



Testing. Advising. Assuring.

Annex 9 to the Test report No. 2015-2115 issued 13.01.2016

Sample I:

