



Testing. Advising. Assuring.

Test report No. 2015-2242

for applying of a required "Verwendbarkeitsnachweis"
issued 15.01.2016

Applicant: Camira Fabrics Ltd
Meltham Mills
Meltham Mills road
Meltham
West Yorkshire
HD9 4 AY

Date of order: 30.11.2015
Date of sampling: *no official sampling of the specimen by a representative of Exova Warringtonfire, Frankfurt*
Date of arrival: 02.12.2015
Date of test: 07.01.2016

Order

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

Description / designation of the test object

Product Name: Xtreme plus 140

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: Xtreme plus 140

Colour: Cayman, Bridgetown, Anguilla, Diablo, Tonga, Havana, Parasol

Composition: 100% Recycled polyester

Substrate: N/A

Intended end use of product: Development contract

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

Pattern

Colour: black(Havana) red(Diablo) light blue(Parasol)

Thickness: 0,77 mm 0,78 mm 0,81 mm

Square weight: 287 g/m² 284 g/m² 300 g/m²

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 (black, Havana)
 Sample B: Material tested crosswise to production direction (black, Havana)
 Sample C: Material tested in production direction (red, Diablo)
 Sample D: Material tested crosswise to production direction (red, Diablo)

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>		2	2	2	
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	1	1	1	1
		min : s	30	30	30	30
3	<u>ascertainments on the front side</u> Flaming/glowing time ¹⁾	min : s	0:04	0:04	0:04	0:04
4	<u>melting / burning through</u> time ¹⁾	min : s	0:03	0:03	0:03	0:03
5	<u>ascertainments on the back side</u> Flaming/glowing time ¹⁾ discolouring time ¹⁾	min : s	no	no	no	no
6		min : s	no	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	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	no
11						
12						
13	duration of burning on the sieve tray (max.)	min : s	not occurred	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	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	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	D	
17	<u>flaming after end of test</u> duration	min : s	--/--	--/--	--/--	--/--
18	number of sample	min : s	--/--	--/--	--/--	--/--
19	front side of sample	min : s	--/--	--/--	--/--	--/--
20	backside of sample	min : s	--/--	--/--	--/--	--/--
21	flame length	cm	--/--	--/--	--/--	--/--
22	<u>glowing after end of test</u> duration	min . s	not occured	not occured	not occured	not occured
23	number of sample	min . s	--/--	--/--	--/--	--/--
	place of occurrence	min . s	--/--	--/--	--/--	--/--
24	lower sample part	min . s	--/--	--/--	--/--	--/--
25	upper sample part	min . s	--/--	--/--	--/--	--/--
26	front side of sample	min . s	--/--	--/--	--/--	--/--
27	backside of sample	min . s	--/--	--/--	--/--	--/--
28	<u>smoke density</u> < 400 % x min		3	15	18	3
29	> 440 % x min		--/--	--/--	--/--	--/--
30	<u>diagram in annex no.</u>		1	1	1	1
31	<u>residual length</u> single results	cm	75 / 66 65 / 70	64 / 67 69 / 71	72 / 66 70 / 68	65 / 68 69 / 68
32	average of the single results	cm	69	67	69	67
33	photo of the sample on page	cm	5	5	5	5
34	<u>smoke temperature</u> max. of the average results	°C	118	119	120	119
35	time ¹⁾	min : s	7:55	9:37	8:31	8:14
36	diagram in annex no.	min : s	1	2	3	4

¹⁾ time from start of test

Remarks: none

2.1.2 Brandschachtprüfung according to DIN 4102-1

Sample E: Material tested in production direction (light blue(Parasol))

Sample F: Material tested crosswise to production (light blue(Parasol))

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			D	E		
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	30	30		
		min : s	0:04	0:04		
3	<u>ascertainties on the front side</u> Flaming/glowing time ¹⁾	min : s	0:03	0:03		
4	<u>melting / burning through</u> time ¹⁾	min : s	0:05	0:06		
5	<u>ascertainties on the back side</u> Flaming/glowing time ¹⁾	min : s	no	no		
6	discolouring 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	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		
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⁾					

¹⁾ time from start of test

Test results of the Brandschacht tests part 2					
line no.		Measurements test sample			
			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	
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		11	10	
29	> 440 % x min		--/--	--/--	
30	<u>diagram in annex no.</u>		1	1	
31	<u>residual length</u> single results	cm	72 / 64 70 / 64	68 / 67 69 / 68	
32	average of the single results	cm	67	68	
33	photo of the sample on page		5	5	
34	<u>smoke temperature</u> max. of the average results	°C	120	120	
35	time ¹⁾	min : s	9:36	7:46	
36	diagram in annex no.		5	6	

¹⁾ time from start of test

Remarks: none

2.1.3 Appearance of the specimen after the test:



Sample A



Sample B



Sample C



Probe D

2.1.4 Appearance of the specimen after the test:



Sample E



Sample F

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

(black, Havana)

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]	-	-	-	-	-
Max. flame height [mm]	110	100	60	80	60
Time [s]	20	20	20	20	20
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	25	25	25	25	25
Smoke development (visuell impression)	moderate smoke development				
Separating from burning material	no	no	yes	no	no
Time [s]	-	-	18	-	-

Remarks: none

Cross direction

(black, Havana)

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]	13	-	-	-	-
Max. flame height [mm]	50	60	80	80	50
Time [s]	8	20	20	20	20
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	25	25	25	25
Smoke development (visuell impression)	moderate 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

Length direction

(red; Diablo)

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	-	-	-
Max. flame height [mm]	100	50	60	70	70
Time [s]	20	14	20	20	20
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	25	-	25	25	25
Smoke development (visuell impression)	moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

Cross direction

(red; Diablo)

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]	11	-	-	-	-
Max. flame height [mm]	40	110	80	70	70
Time [s]	9	20	12	17	20
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	25	25	25	25
Smoke development (visuell impression)	moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.3 Normal flammability test according to DIN 4102-1

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

Length direction

(light blue(Parasol))

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]	-	8	7	8	9
Max. flame height [mm]	60	50	50	40	70
Time [s]	20	7	5	5	8
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	25	-	-	-	-
Smoke development (visuell impression)	moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

Cross direction

(light blue(Parasol))

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	-	-
Max. flame height [mm]	90	70	60	80	60
Time [s]	20	20	7	20	17
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	25	25	-	25	25
Smoke development (visuell impression)	moderate smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.4 Appearance of the sample after the small burner test:



2.2.5 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 burning droplets

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 15.01.2016

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

H. Anders
Tester in Charge

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

Dipl.-Ing. T. Zachäus
Laboratory supervisor

This Test report is valid until 06.01.2021

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

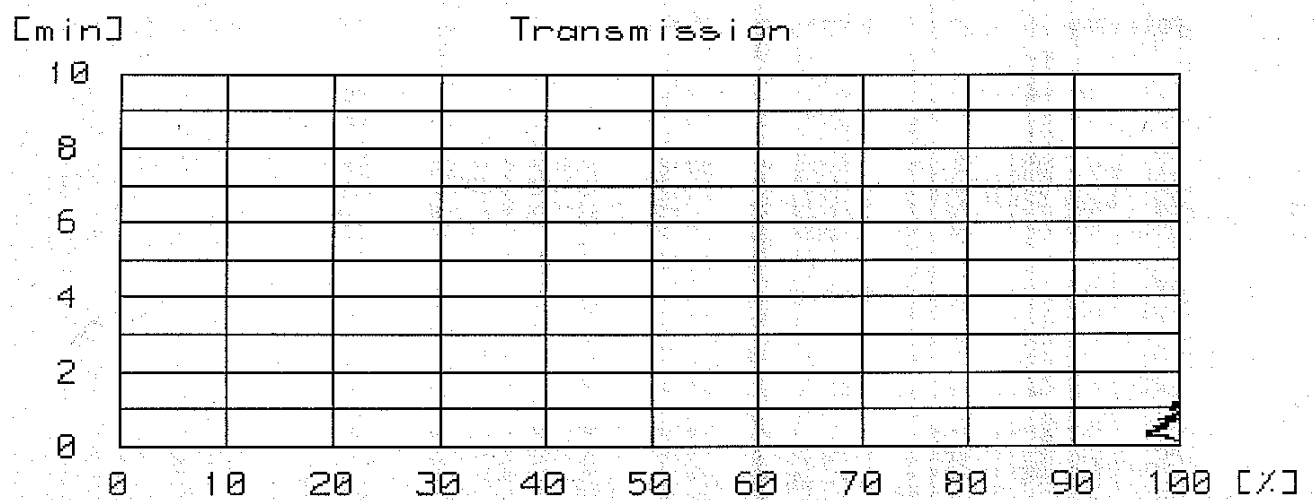
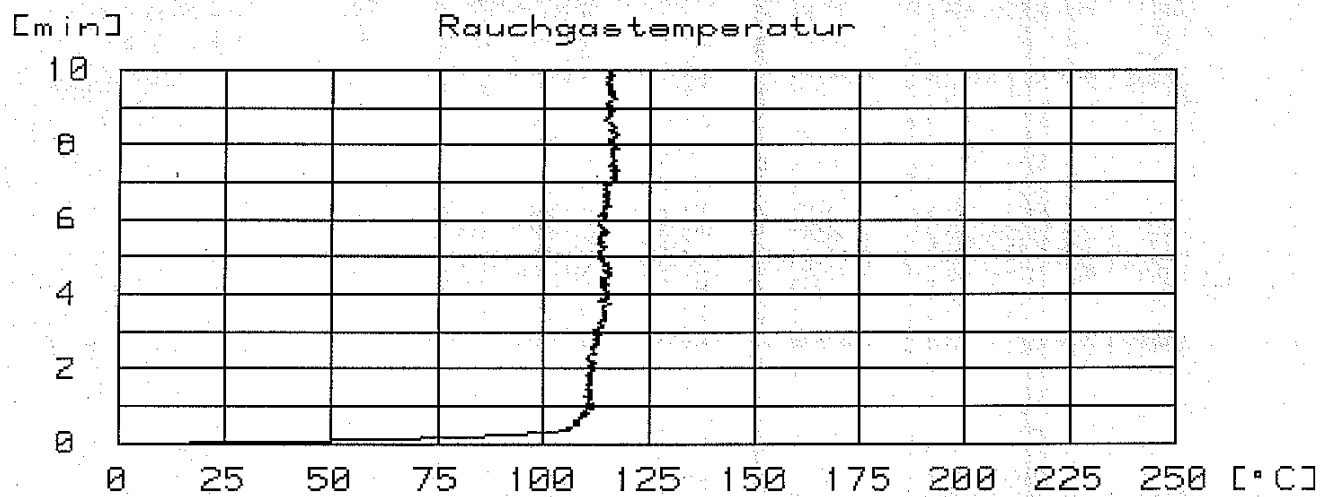
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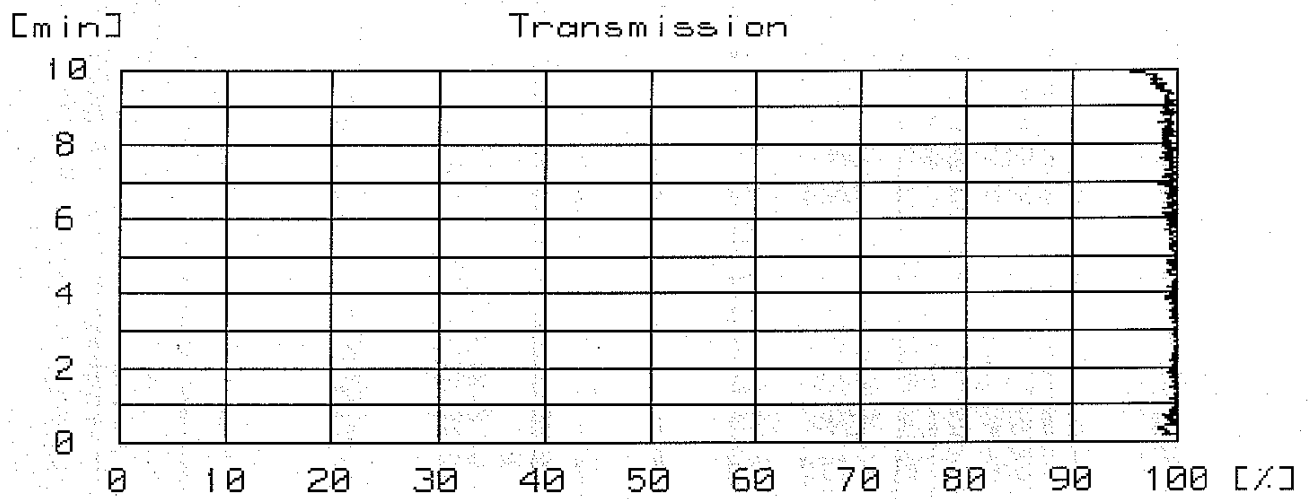
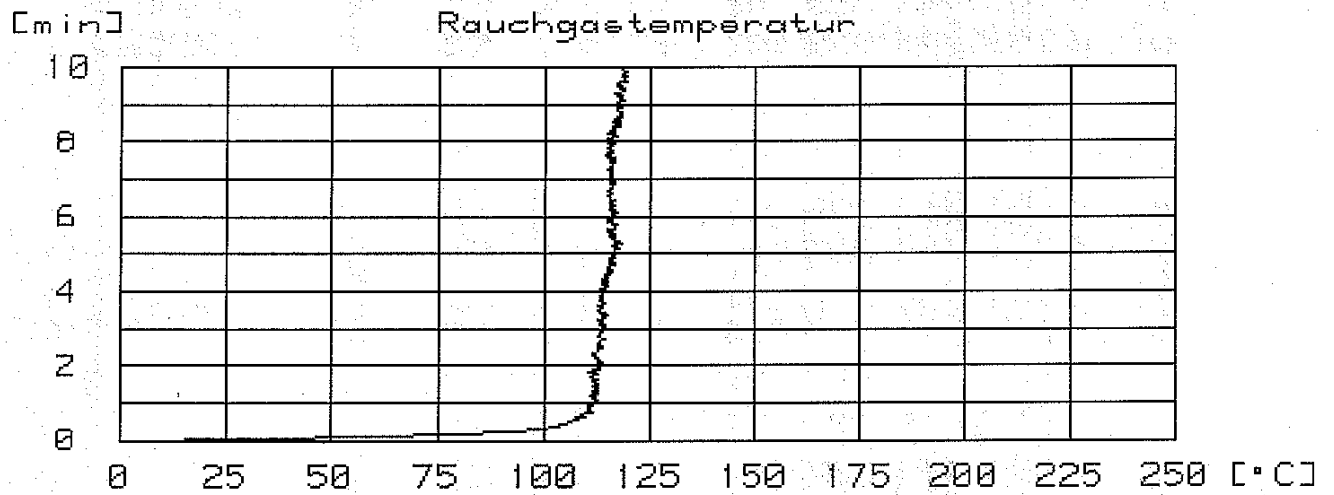
This test report contains 16 pages and 6 annexes.

Annex 1 to the Test report No. 2015-2242 issued 15.01.2016

Sample A:



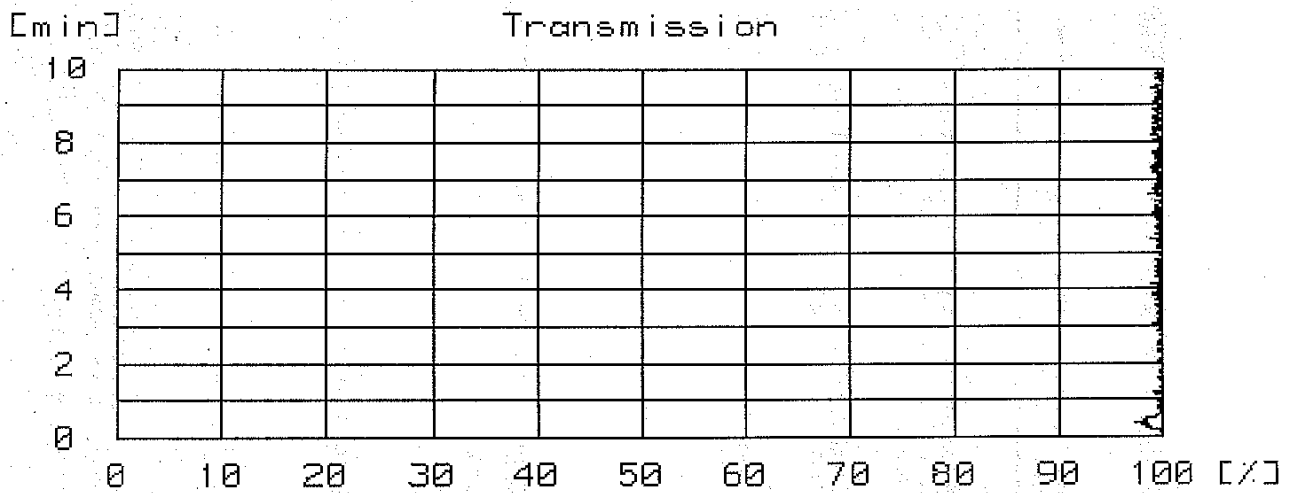
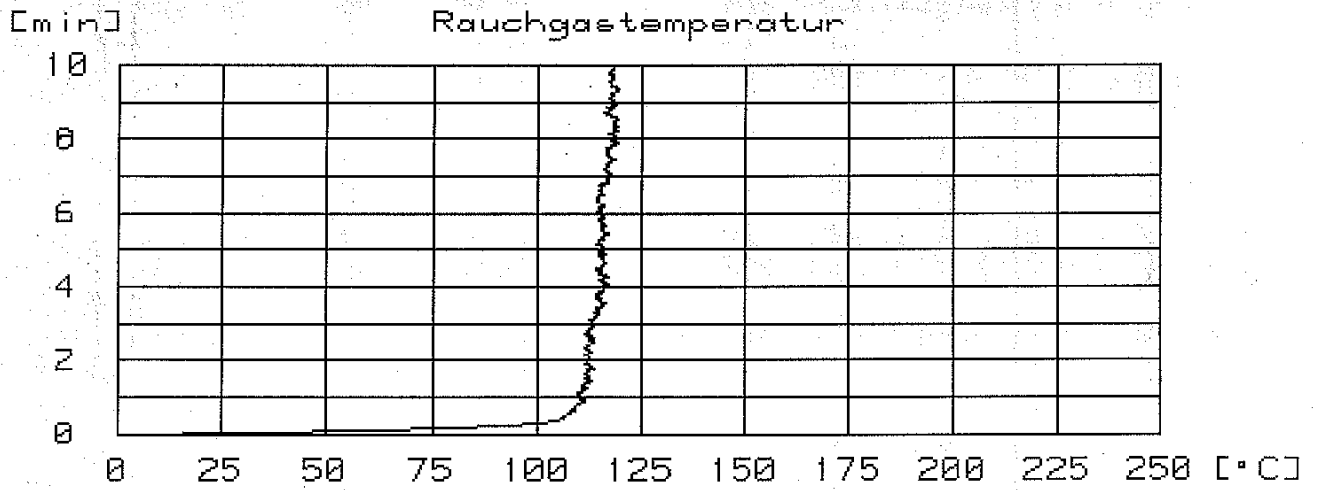
Sample B:



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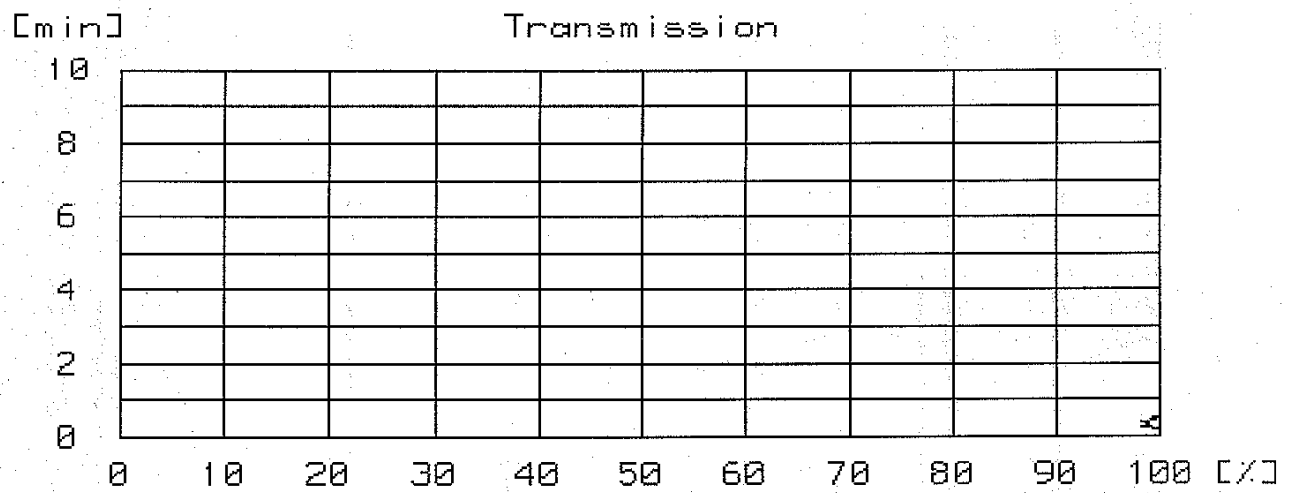
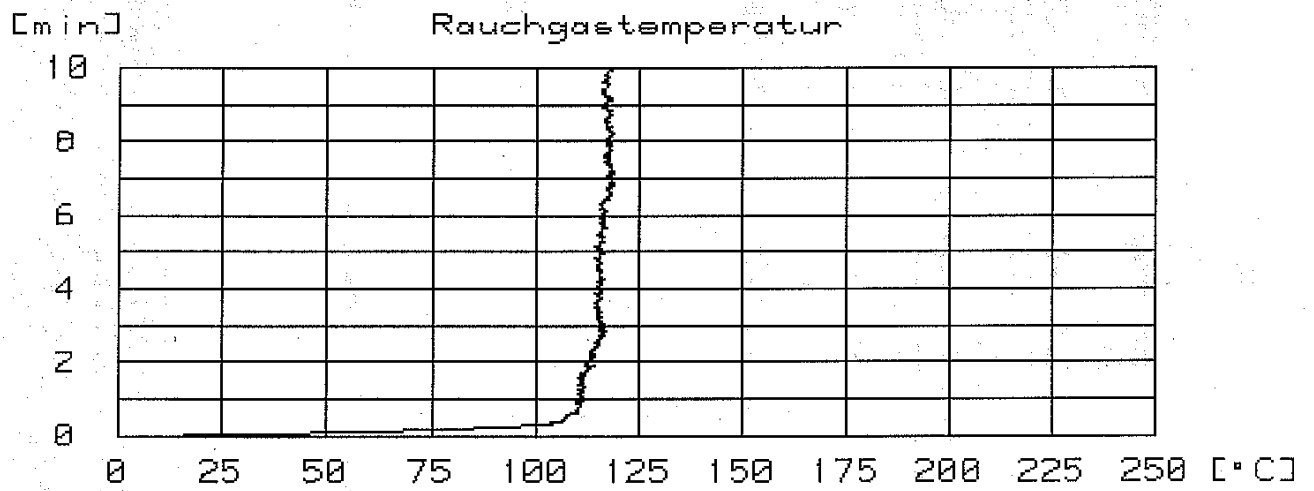
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Sample C:

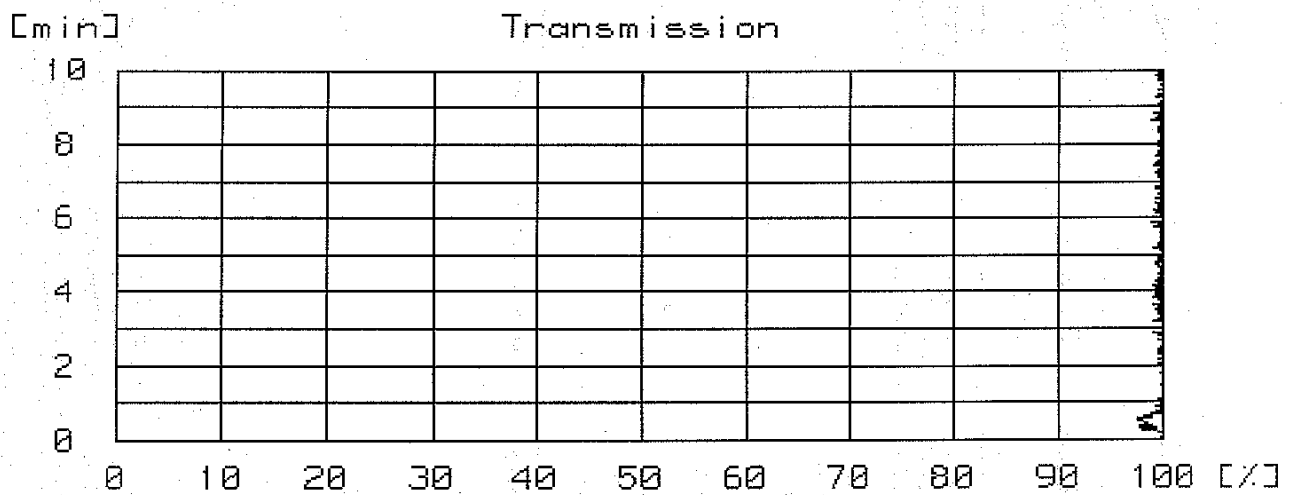
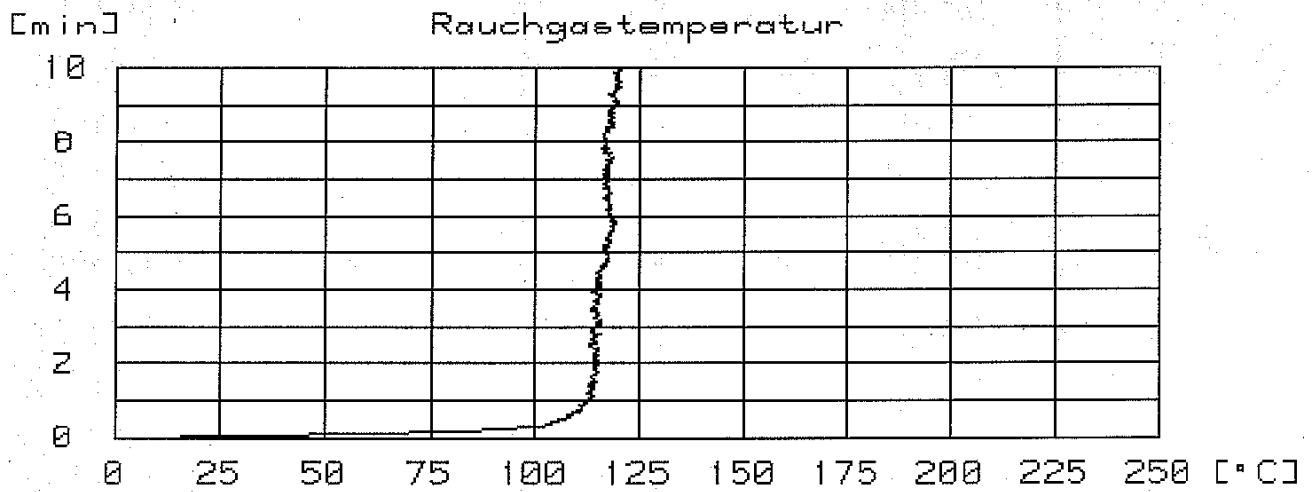


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Sample D:



Sample E:



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Sample F:

