Exova Warringtonfire, Frankfurt
Industriepark Höchst, C369
Frankfurt am Main
D-65926
Germany

T : +49 (0) 69 305 3476
F : +49 (0) 69 305 17071
E : EBH@exova.com
W: www.exova.com

Testing. Advising. Assuring.

Test report No. 2018-1487

for applying of a required "Verwendbarkeitsnachweis"
issued 04.09.2018

Applicant:

Camira Fabrics Ltd,
Meltham Mills,
Meltham Mills Road
Meltham
West Yorkshire
HD9 4AY

Date of order: **06.06.2018**
Date of sampling: ***no official sampling of the specimen by a representative of Exova Warringtonfire, Frankfurt***
Date of arrival: **11.06.2018**
Date of test: **24.08.2018 + 31.08.2018**

Order

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

Description / designation of the test object

Product name: X2

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".

DAkkS Deutsche Akkreditierungsstelle D-PL-18354-01-00

1. Description of the test material

1.1 Details of the customer:

Produktname: X2

Probenbeschreibung:

Composition – 100% Recycled Flame Retardant Polyester

Weight:	310 g/m²	310 g/m²	310 g/m²
Colour:	Arithmatic	Percentage	Metric
Batch:	375494	386575	371312

Intended end use of product: Contract upholstery

1.2 By Exova Warringtonfire, Frankfurt determined values:

Fabric sample

Colour:	grey	blue	gold
Thickness:	0,87 mm	0,76 mm	0,85 mm
Square weight:	312 g/m²	299 g/m^2	315 g/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. Colour: grey
Sample B: Material tested cross to the production direction. Colour: grey
Sample C: Material tested in production direction. Colour: blue
Sample D: Material tested cross to the production direction. Colour: blue

Test results of the Brandschacht tests part 1						
line no.			Measurements test sample			
			A	B	C	D
1	no. test arrangement according to DIN 4102 part 15, table 1		1	1	1	1
2	flame height max. over lower sample edge	cm	30	30	30	30
	time [1)]	min : s	00:11	00:11	00:11	00:10
3	ascertainments on the front side Flaming/glowing time [1)]	min : s	00:04	00:03	00:04	00:04
4	melting / burning through time [1)]	min : s	00:07	00:06	00:07	00:06
5	ascertainments on the back side Flaming/glowing time [1)]	min : s	no	no	no	no
6	discolouring time [1)]	min : s	no	no	no	no
7	burning droplets begin [1)]	min : s	no	no	no	no
	extent					
8	occasional dropping of material					
9	constant dropping of material					
10	separating from burning sample parts begin [1)]	min : s	no	no	no	no
11	occasional separating parts					
12	constant separating parts					
13	duration of burning on the sieve tray (max.)	min : s	no	no	no	no
14	influence on the burner flame by dropping of / separating material time [1)]	min : s	no	no	no	no
15	earlier end of test 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
	flaming after end of test		no	no	no	no
17	duration		no	no	no	no
18	number of sample	min : s	no	no	no	no
19	front side of sample		no	no	no	no
20	backside of sample		no	no	no	no
21	flame length	cm	no	no	no	no
	glowing after end of test		--/--	--/--	--/--	--/--
22	duration	min . s	no	no	no	no
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
	smoke density					
28	< 400 % x min		1	2	2	2
29	> 440 % x min		--/--	--/--	--/--	--/--
30	diagram in annex no.		1	2	3	4
	residual length					
31	single results	cm	66 / 63 61 / 57	66 / 67 65 / 57	67 / 68 67 / 64	69 / 65 67 / 67
32	average of the single results	cm	61	66	66	67
33	photo of the sample on page		7	7	7	7
	smoke temperature					
34	max. of the average results	°C	115	120	122	122
35	time [1)]	min : s	09:54	09:58	09:23	09:49
36	diagram in annex no.		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. Colour: gold
Sample F: Material tested cross to the production direction. Colour: gold

Test results of the Brandschacht tests part 1						
line no.			Measurements test sample			
			E	F	G	H
1	no. test arrangement according to DIN 4102 part 15, table 1		1	1	1	1
2	flame height max. over lower sample edge	cm	30	30		
	time [1)]	min : s	00:09	00:10		
3	ascertainments on the front side Flaming/glowing time [1)]	min : s	00:04	00:03		
4	melting / burning through time [1)]	min : s	00:07	00:06		
5	ascertainments on the back side Flaming/glowing time [1)]	min : s	no	no		
6	discolouring time [1)]	min : s	no	no		
7	burning droplets begin [1)]	min : s	no	no		
	extent					
8	occasional dropping of material					
9	constant dropping of material					
10	separating from burning sample parts 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	no	no		
14	influence on the burner flame by dropping of / separating material time [1)]	min : s	no	no		
15	earlier end of test 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 from start of test

Test results of the Brandschacht tests part 2						
line no.			Measurements test sample			
			E	F	G	H
	flaming after end of test		no	no		
17	duration	min : s	no	no		
18	number of sample		no	no		
19	front side of sample		no	no		
20	backside of sample		no	no		
21	flame length	cm	no	no		
	glowing after end of test		--/--	--/--		
22	duration	min . s	no	no		
23	number of sample		no	no		
	place of occurrence		no	no		
24	lower sample part		no	no		
25	upper sample part		no	no		
26	front side of sample		no	no		
27	backside of sample		no	no		
	smoke density					
28	< 400 % x min		3	2		
29	> 440 % x min		--/--	--/--		
30	diagram in annex no.		5	6		
	residual length					
31	single results	cm	70 / 70 70 / 62	67 / 60 67 / 65		
32	average of the single results	cm	68	64		
33	photo of the sample on page		8	8		
	smoke temperature					
34	max. of the average results	°C	123	123		
35	time [1)]	min : s	09:26	09:29		
36	diagram in annex no.		5	6		

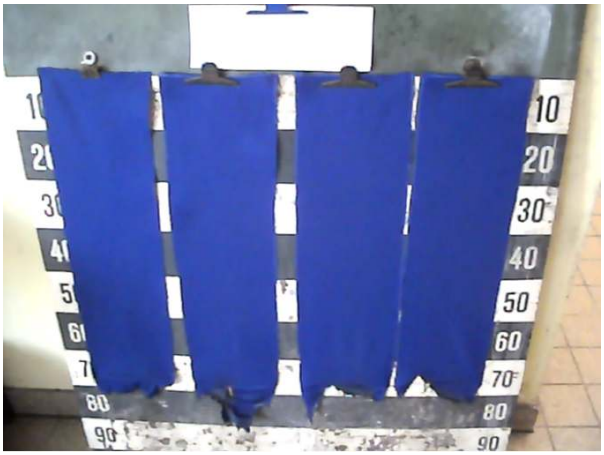
[1)] time from start of test

Remarks: none

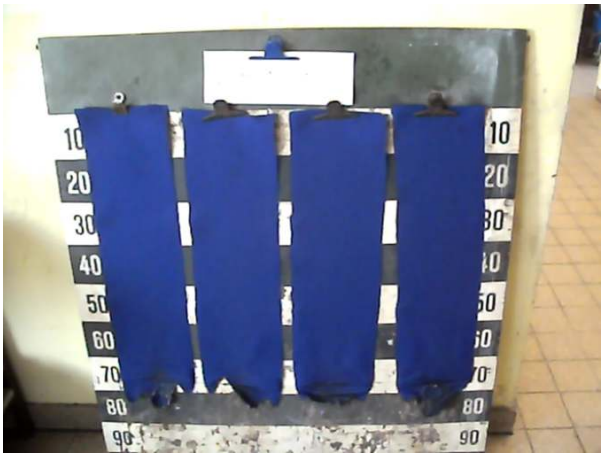
2.1.3 Appearance of the specimen after the test:

Sample A

Sample B



Sample C



Sample 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: colour: grey

Sample-no. / Time from start of test		1	2	3	4	5
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]	23	-	-	-	-
Max. flame height	[mm]	30	70	50	90	70
Time	[s]	5	10	10	12	11
End of afterflaming	[s]	8	>10	>10	>10	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	25	25	25	25
Smoke development (visual impression) low / moderate / strong		strong smoke development				
Separating from burning material		no	yes	yes	yes	yes
Time	[s]	-	17	17	16	16

Remarks: none

cross direction: colour: grey

Sample-no. / Time from start of test		1	2	3	4	5
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]	20	22	7	-	-
Max. flame height	[mm]	50	50	30	80	50
Time	[s]	15	18	5	12	14
End of afterflaming	[s]	5	7	-	>10	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	-	-	25	25
Smoke development (visual impression) low / moderate / strong		strong 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: colour: blue

Sample-no. / Time from start of test		1	2	3	4	5
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]		22	20	7	23	-
Max. flame height	[mm]	60	60	30	50	80
Time	[s]	14	13	5	12	12
End of afterflaming	[s]	7	5	-	8	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	-	-	-	25
Smoke development (visual impression) low / moderate / strong		moderate smoke development				
Separating from burning material		no	no	no	no	no
Time	[s]	-	-	-	-	-

Remarks: none

cross direction: colour: blue

Sample-no. / Time from start of test		1	2	3	4	5
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	-	13	23	24
Max. flame height	[mm]	30	70	40	80	70
Time	[s]	6	15	8	15	15
End of afterflaming	[s]	-	>10	-	8	9
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	25	-	-	-
Smoke development (visual impression) low / moderate / strong		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: colour: gold

Sample-no. / Time from start of test		1	2	3	4	5
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	16	-	-	-
Max. flame height	[mm]	30	60	60	60	70
Time	[s]	3	13	12	14	15
End of afterflaming	[s]	-	1	>10	>10	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	-	25	25	25
Smoke development (visual impression) low / moderate / strong		moderate smoke development				
Separating from burning material		no	no	no	no	no
Time	[s]	-	-	-	-	-

Remarks: none

cross direction: colour: gold

Sample-no. / Time from start of test		1	2	3	4	5
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]		-	5	-	4	8
Max. flame height	[mm]	70	30	40	30	40
Time	[s]	18	4	8	3	5
End of afterflaming	[s]	>10	-	>10	-	-
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	25	-	25	-	-
Smoke development (visual impression) low / moderate / strong		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:

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 colours, surface weights and thicknesses.
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 DIN 4102-16 4.2, the test result applies to all colours.

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 04.09.2018

H. Anders
Tester in Charge

P. Scheinkönig
Prüfstellenleiter Bau-PVO

DAkkS
Deutsche
Akkreditierungsstelle
D-PL-18354-01-00

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This test report is a translation of the German version 2018-1487 (issued 04.09.2018). In case of doubt only the German version is valid
This test report contains 13 pages and 6 annexes.
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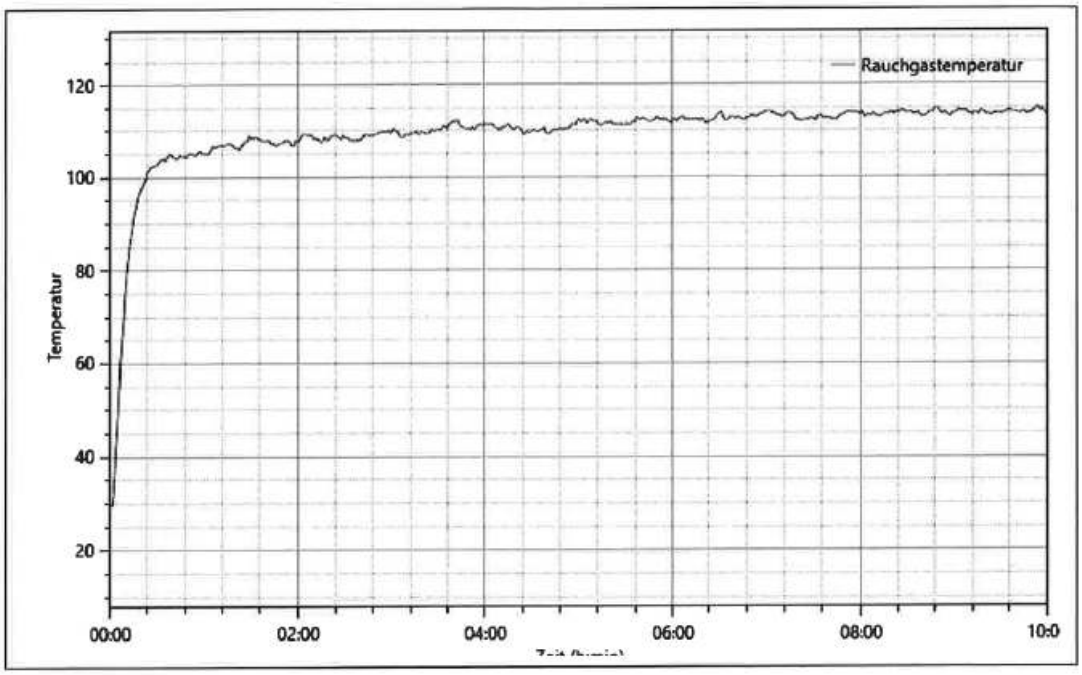
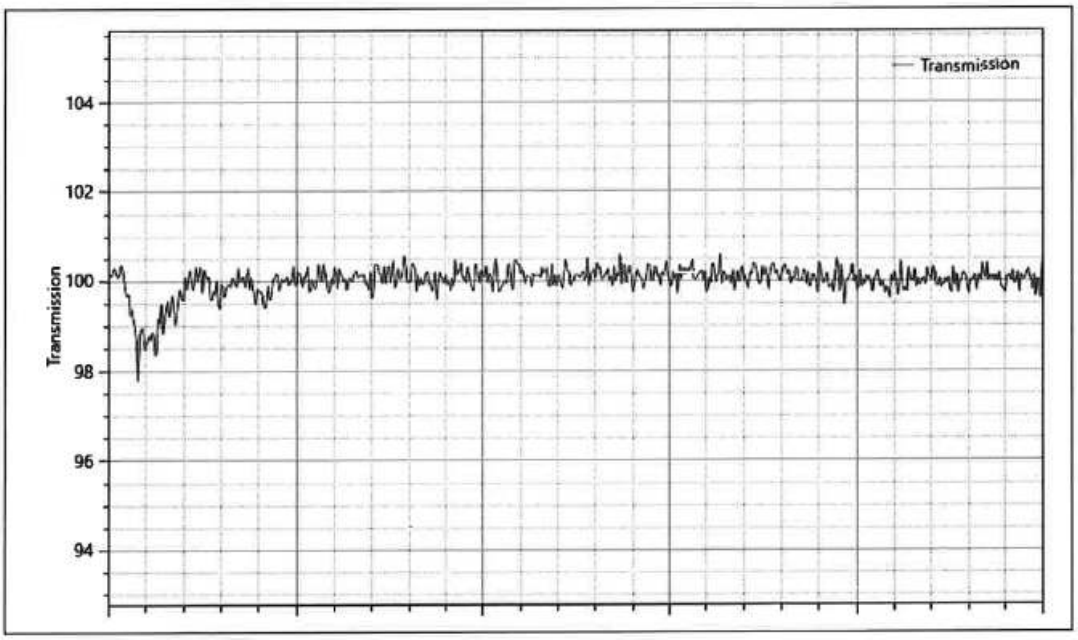
Annex 1 to the Test report No. 2018-1487 issued 04.09.2018

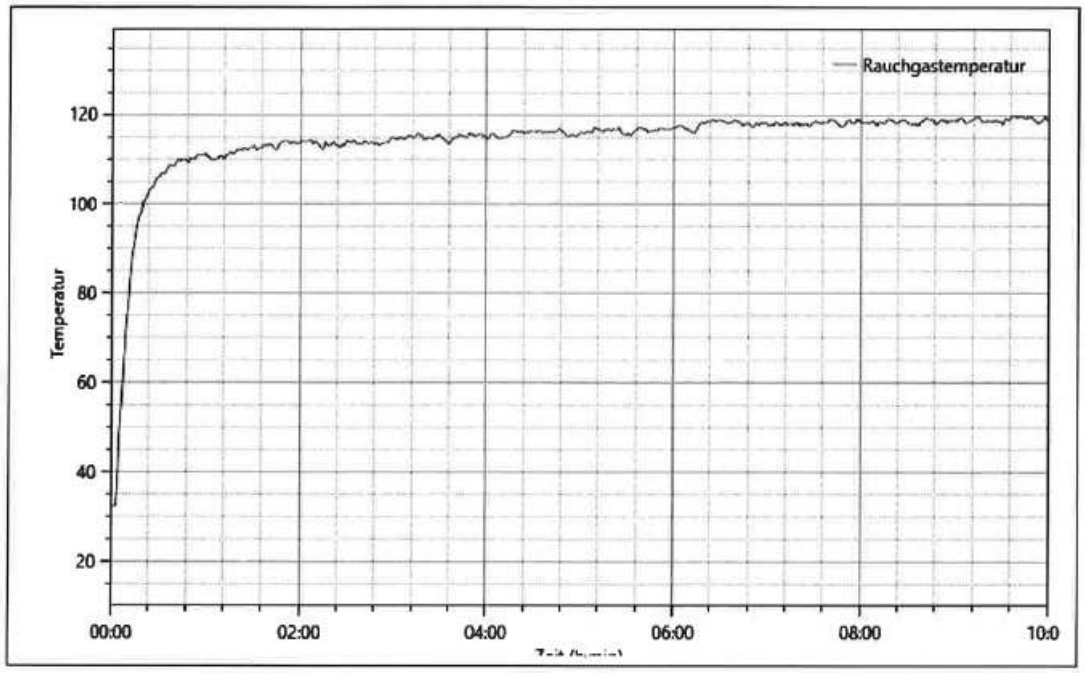
Sample A:

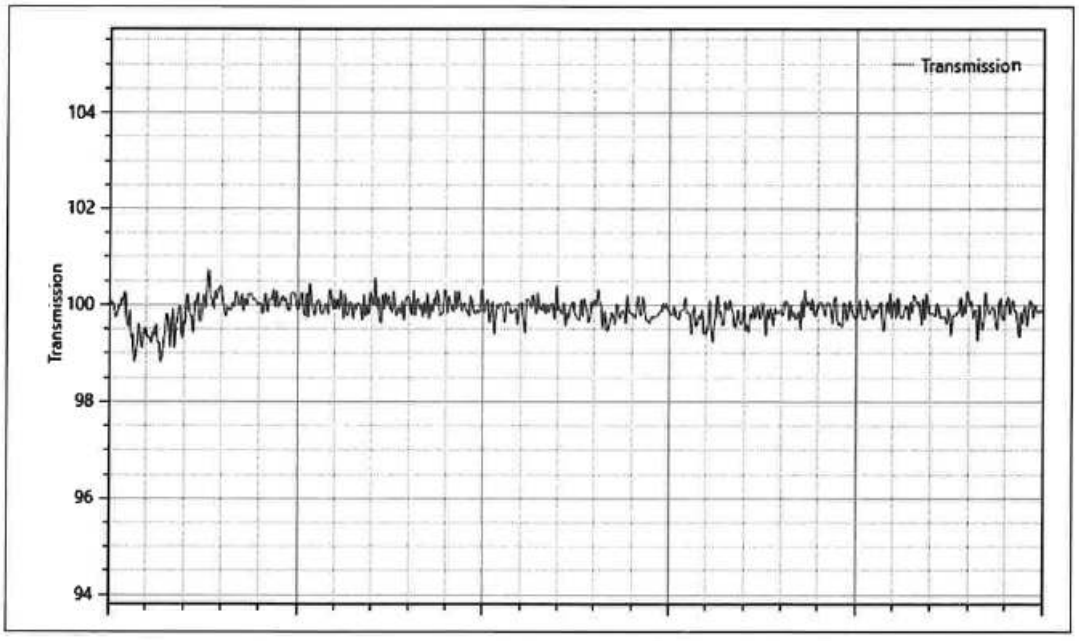




Annex 2 to the Test report No. 2018-1487 issued 04.09.2018

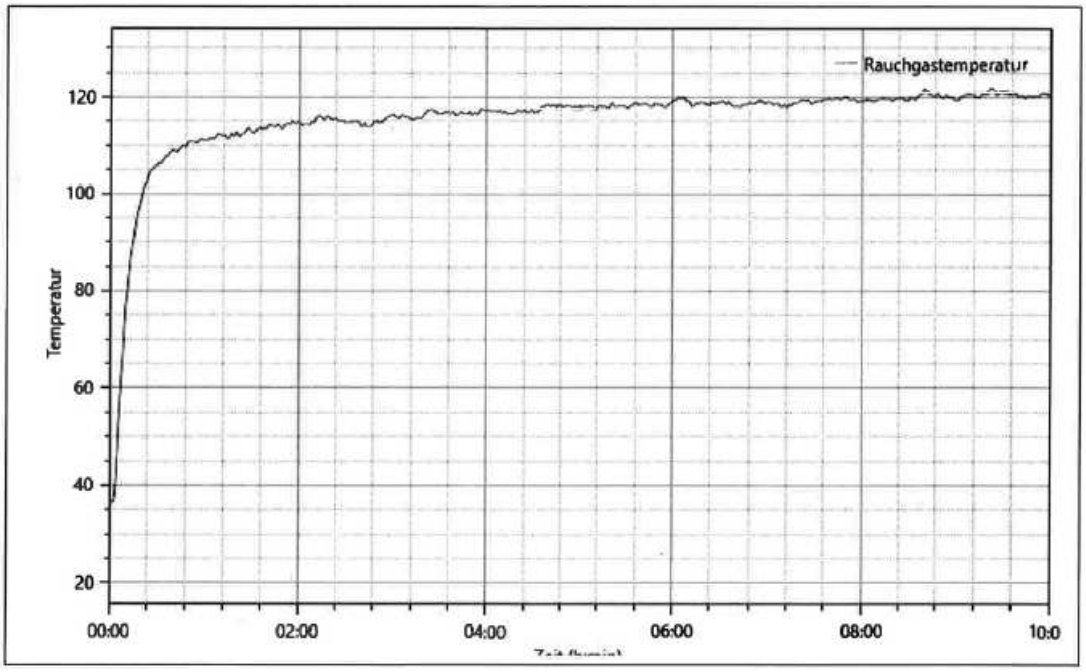
Sample B:

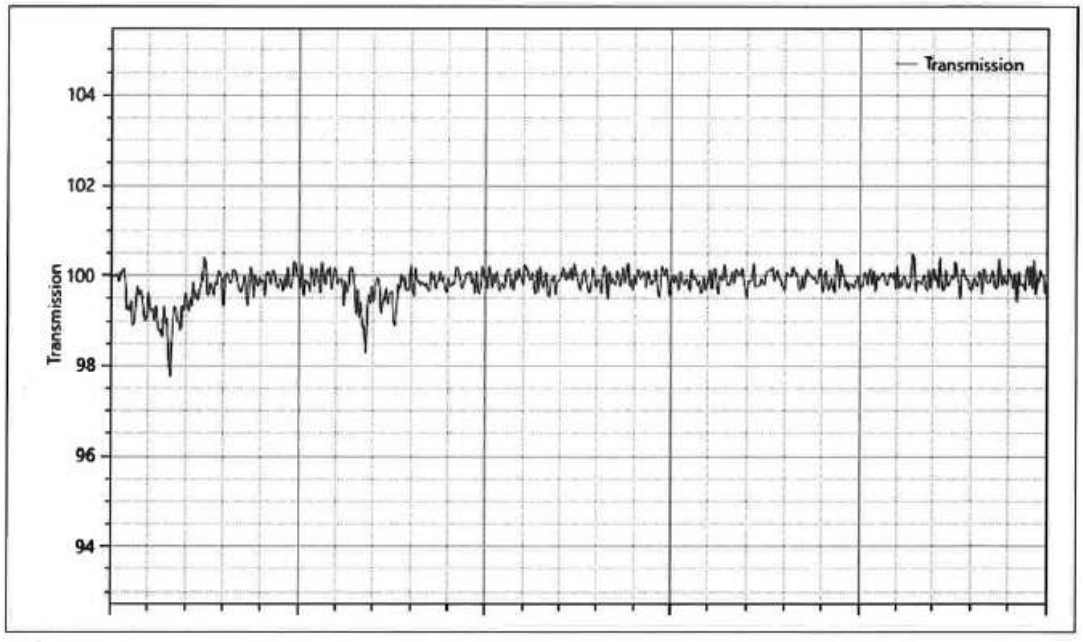




Annex 3 to the Test report No. 2018-1487 issued 04.09.2018

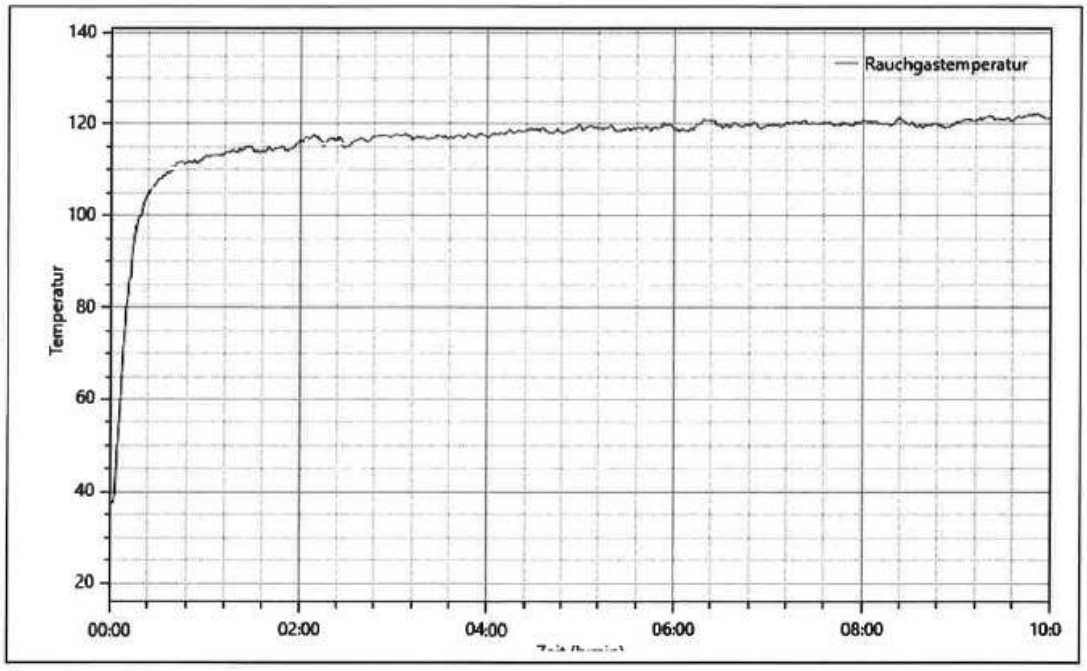
Sample C:

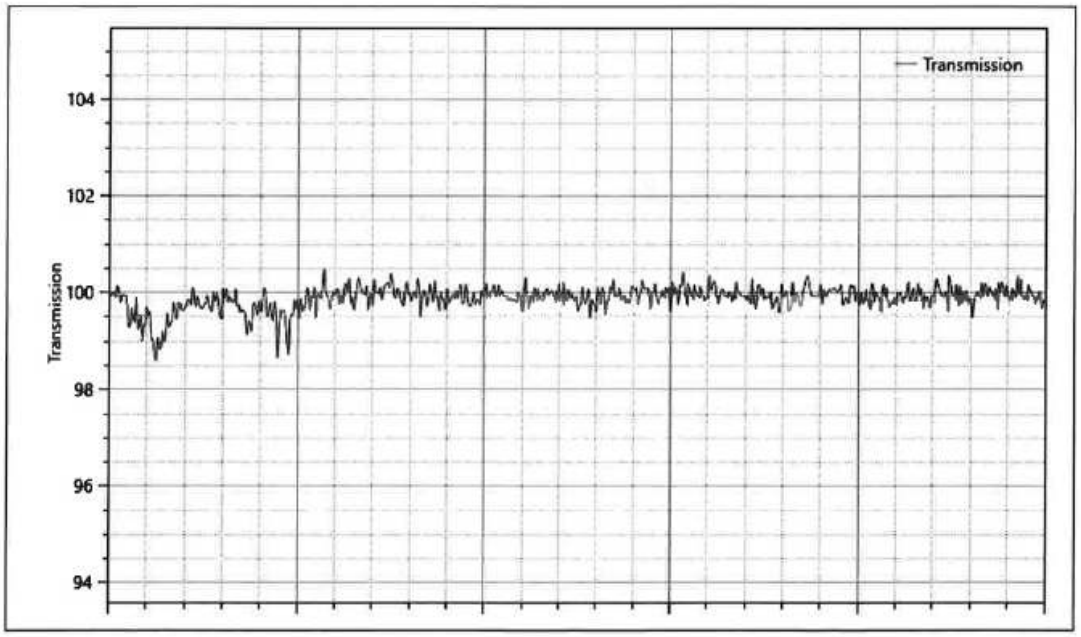




Annex 4 to the Test report No. 2018-1487 issued 04.09.2018

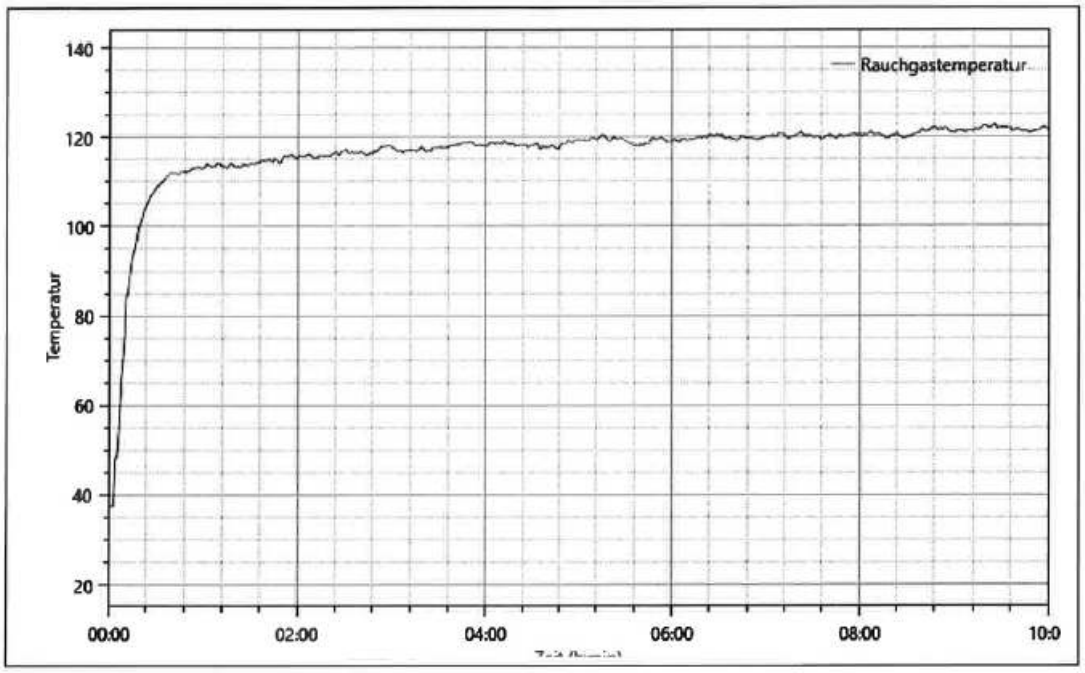
Sample D:

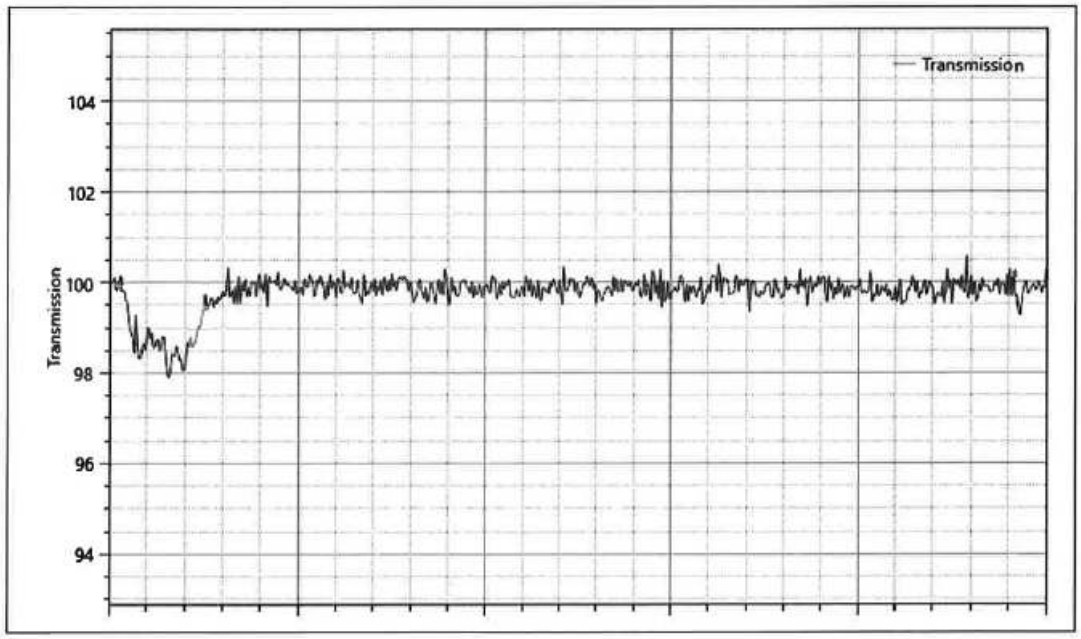




Annex 5 to the Test report No. 2018-1487 issued 04.09.2018

Sample E:





Annex 6 to the Test report No. 2018-1487 issued 04.09.2018

Sample F: