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VIPEQ CANADA
TEST REPORT

SCOPE OF WORK
ASTM E1354, *STANDARD TEST METHOD FOR HEAT AND VISIBLE SMOKE RELEASE RATES FOR MATERIALS AND PRODUCTS USING AN OXYGEN CONSUMPTION CALORIMETER*, ON CORKSHIELD

REPORT NUMBER
10374415MID-001

TEST DATE(S)
01/08/19

ISSUE DATE **[REVISED DATE]**
01/08/19 N/A

PAGES
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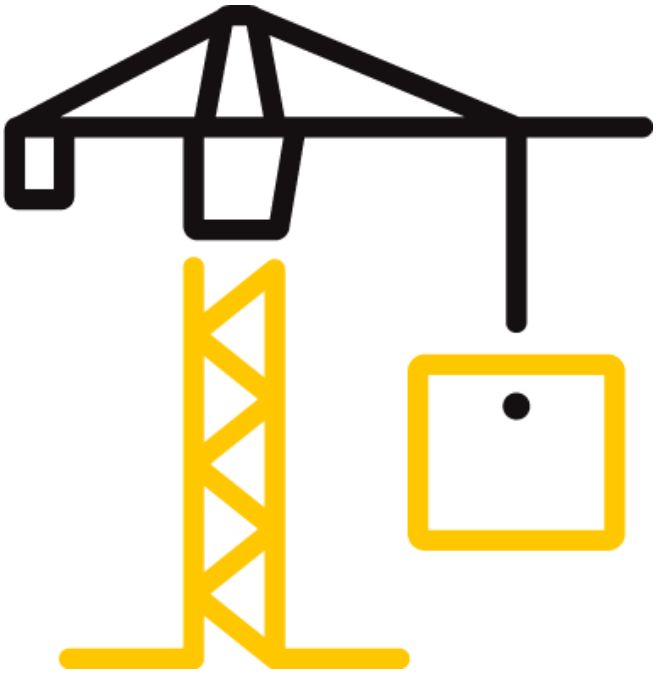

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TEST REPORT FOR VIPEQ CANADA
Report No.: 10374415MID-001
Date: 01/08/19

REPORT ISSUED TO
VIPEQ CANADA
7301 E Danbro Crescent
Mississauga, ON L5N 6P8
Canada

SECTION 1
SCOPE

Intertek Building & Construction (B&C) was contracted by Vipeq Canada to perform testing in accordance with ASTM E1354, *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter*, on their Corksheild. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at Intertek test facility in Middleton, WI.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Bryan Bowman	**REVIEWED BY:**	Mark Crawford
TITLE:	Chemist	**TITLE:**	Engineering Team Lead
SIGNATURE:		**SIGNATURE:**	
DATE:	01/08/19	**DATE:**	01/08/19

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SECTION 2
TEST METHOD(S)

The specimens were evaluated in accordance with the following:

> **ASTM E1354-15a,** *Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter, ASTM International.*

SECTION 3
MATERIAL SOURCE

The specimens were provided by the client. Samples were received at the Evaluation Center on December 19, 2018 in good condition. Sample ID is MID1812191254-001

SECTION 4
EQUIPMENT

EQUIPMENT			
DESCRIPTION - ASSET #:	Cone Calorimeter - 1199	CALIBRATION DUE:	VBU
DESCRIPTION - ASSET #:	Scale - 1482	CALIBRATION DUE:	4/4/2019
DESCRIPTION - ASSET #:	Flow Meter - 1270	CALIBRATION DUE:	11/11/2019
DESCRIPTION - ASSET #:	Heat Flux Transducer - 1405	CALIBRATION DUE:	10/8/2019
DESCRIPTION - ASSET #:	Balance - 1396	CALIBRATION DUE:	4/4/2019
DESCRIPTION - ASSET #:	Caliper - 1248	CALIBRATION DUE:	4/3/2019
DESCRIPTION - ASSET #:	Room Temp/Humidity - 1456	CALIBRATION DUE:	3/28/2019
DESCRIPTION - ASSET #:	Conditioning Chamber - 1451	CALIBRATION DUE:	12/4/2019

SECTION 5
TEST PROCEDURE

The cone calorimeter test was run as written in ASTM E1354 section 11 – Procedure.

SECTION 6
TEST CALCULATIONS

The cone calorimeter calculations were performed as written in ASTM E1354 section 13 – Calculations.

SECTION 7
TEST SPECIMEN DESCRIPTION

The samples were prepared and cut by the client into 100 x 100 mm samples. The samples are a tan colored rough surface coated on an inflammable substrate. Specimens were conditioned to moisture equilibrium (constant mass) at an ambient temperature of 23 ± 3°C and a relative humidity of 50 ± 5%.

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SECTION 8

TEST RESULTS

Specimen information

E	13.1 MJ/kg	Specimen number	1	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	100.29 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	08:41
Date of report	08/01/2019

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.256 kPa
Relative humidity	28%

Initial conditions

Baseline ambient oxygen	20.800%
Baseline oxygen	20.949%
Baseline carbon dioxide	0.0463%
Mass at sustained flaming	100.3 g

Test times

Time to ignition	21 s
Time to flameout	72 s
End of test criterion	User entered
End of test time (for calculations)	192 s

Heat Release Results

THR (0-300)	4.31 MJ/m²
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.34 MJ/kg

Test results (between 21 and 192 s)

Total heat release	3.9 MJ/m²
Total oxygen consumed	2.7 g
Mass lost	5.6 g
Average specific MLR	3.80 g/(s·m²)
Total smoke release	37.1 m²/m²
Total smoke production	0.3 m²
MAHRE	43.0 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	22.70	80.80	34
Effective heat of comb. (MJ/kg)	6.14	73.38	54
Mass loss rate (g/s)	0.032	0.350	78
Specific extinction area (m²/kg)	46.40	2555.24	147
Carbon monoxide yield (kg/kg)	0.0561	31.0653	183
Carbon dioxide yield (kg/kg)	0.48	79.32	114

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 383 s	0 s - 383 s
Heat release rate (kW/m²)	54.09	30.52	-	-	-	-	11.94	11.94
Effective heat of comb. (MJ/kg)	11.41	7.55	-	-	-	-	4.49	4.49
Mass loss rate (g/s)	0.042	0.035	-	-	-	-	0.023	0.023
Specific extinction area (m²/kg)	59.77	56.77	-	-	-	-	48.74	48.74
Carbon monoxide yield (kg/kg)	0.0361	0.0494	-	-	-	-	0.0704	0.0704
Carbon dioxide yield (kg/kg)	0.81	0.57	-	-	-	-	0.39	0.39

Smoke results

Total smoke release: non-flaming phase (0 s - 21 s)	7.6 m²/m²
Total smoke release: flaming phase (21 s - 192 s)	37.1 m²/m²
Total smoke release: whole test (0 s - 192 s)	44.7 m²/m²

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Specimen information

E	13.1 MJ/kg	Specimen number	2	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	104.17 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	08:53
Date of report	08/01/2019

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.295 kPa
Relative humidity	28%

Initial conditions

Baseline ambient oxygen	20.802%
Baseline oxygen	20.951%
Baseline carbon dioxide	0.0474%
Mass at sustained flaming	104.0 g

Test times

Time to ignition	19 s
Time to flameout	89 s
End of test criterion	User entered
End of test time (for calculations)	209 s

Heat Release Results

THR (0-300)	5.52 MJ/m²
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.44 MJ/kg

Test results (between 19 and 209 s)

Total heat release	5.2 MJ/m²
Total oxygen consumed	3.4 g
Mass lost	6.3 g
Average specific MLR	3.85 g/(s·m²)
Total smoke release	47.7 m²/m²
Total smoke production	0.4 m²
MAHRE	49.2 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	27.12	85.84	35
Effective heat of comb. (MJ/kg)	7.23	52.34	75
Mass loss rate (g/s)	0.033	0.199	29
Specific extinction area (m²/kg)	61.70	3816.23	126
Carbon monoxide yield (kg/kg)	0.0523	10.7373	117
Carbon dioxide yield (kg/kg)	0.52	94.44	76

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 320 s	0 s - 320 s
Heat release rate (kW/m²)	63.61	39.91	28.45	-	-	-	17.55	17.55
Effective heat of comb. (MJ/kg)	14.34	10.07	7.32	-	-	-	5.78	5.78
Mass loss rate (g/s)	0.039	0.035	0.034	-	-	-	0.027	0.027
Specific extinction area (m²/kg)	52.23	69.96	58.99	-	-	-	62.02	62.02
Carbon monoxide yield (kg/kg)	0.0355	0.0482	0.0504	-	-	-	0.0583	0.0583
Carbon dioxide yield (kg/kg)	1.00	0.70	0.52	-	-	-	0.43	0.43

Smoke results

Total smoke release: non-flaming phase (0 s - 19 s)	6.2 m²/m²
Total smoke release: flaming phase (19 s - 209 s)	47.7 m²/m²
Total smoke release: whole test (0 s - 209 s)	53.9 m²/m²

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TEST REPORT FOR VIPEQ CANADA

Report No.: 10374415MID-001
Date: 01/08/19

Specimen information

E	13.1 MJ/kg	Specimen number	3	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	99.03 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	09:08
Date of report	08/01/2019

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.306 kPa
Relative humidity	28%

Initial conditions

Baseline ambient oxygen	20.803%
Baseline oxygen	20.952%
Baseline carbon dioxide	0.0466%
Mass at sustained flaming	99.1 g

Test times

Time to ignition	17 s
Time to flameout	82 s
End of test criterion	User entered
End of test time (for calculations)	202 s

Heat Release Results

THR (0-300)	4.49 MJ/m²
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.38 MJ/kg

Test results (between 17 and 202 s)

Total heat release	4.2 MJ/m²
Total oxygen consumed	2.9 g
Mass lost	5.9 g
Average specific MLR	3.73 g/(s·m²)
Total smoke release	25.7 m²/m²
Total smoke production	0.2 m²
MAHRE	43.7 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	22.94	78.47	34
Effective heat of comb. (MJ/kg)	6.36	48.36	46
Mass loss rate (g/s)	0.032	0.166	58
Specific extinction area (m²/kg)	18.22	1873.28	194
Carbon monoxide yield (kg/kg)	0.0587	11.9397	194
Carbon dioxide yield (kg/kg)	0.49	42.53	32

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 340 s	0 s - 340 s
Heat release rate (kW/m²)	55.47	32.63	23.46	-	-	-	13.37	13.37
Effective heat of comb. (MJ/kg)	12.85	7.81	6.25	-	-	-	4.79	4.79
Mass loss rate (g/s)	0.038	0.036	0.033	-	-	-	0.025	0.025
Specific extinction area (m²/kg)	25.51	22.67	18.30	-	-	-	14.16	14.16
Carbon monoxide yield (kg/kg)	0.0433	0.0491	0.0564	-	-	-	0.0690	0.0690
Carbon dioxide yield (kg/kg)	0.92	0.58	0.48	-	-	-	0.41	0.41

Smoke results

Total smoke release: non-flaming phase (0 s - 17 s)	5.1 m²/m²
Total smoke release: flaming phase (17 s - 202 s)	25.7 m²/m²
Total smoke release: whole test (0 s - 202 s)	30.8 m²/m²

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Specimen information

E	13.1 MJ/kg	Specimen number	4	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	100.4 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	09:22
Date of report	08/01/2019

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.322 kPa
Relative humidity	28%

Initial conditions

Baseline ambient oxygen	20.795%
Baseline oxygen	20.944%
Baseline carbon dioxide	0.0470%
Mass at sustained flaming	100.3 g

Test times

Time to ignition	17 s
Time to flameout	78 s
End of test criterion	User entered
End of test time (for calculations)	198 s

Heat Release Results

THR (0-300)	4.11 MJ/m²
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.34 MJ/kg

Test results (between 17 and 198 s)

Total heat release	3.8 MJ/m²
Total oxygen consumed	2.6 g
Mass lost	5.8 g
Average specific MLR	3.66 g/(s·m²)
Total smoke release	21.5 m²/m²
Total smoke production	0.2 m²
MAHRE	41.4 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	21.04	74.87	32
Effective heat of comb. (MJ/kg)	5.82	53.04	28
Mass loss rate (g/s)	0.032	0.203	142
Specific extinction area (m²/kg)	8.63	2034.02	94
Carbon monoxide yield (kg/kg)	0.0560	1.6542	133
Carbon dioxide yield (kg/kg)	0.46	15.37	59

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 355 s	0 s - 355 s
Heat release rate (kW/m²)	52.23	30.07	21.15	-	-	-	11.67	11.67
Effective heat of comb. (MJ/kg)	12.61	7.64	5.83	-	-	-	4.23	4.23
Mass loss rate (g/s)	0.037	0.035	0.032	-	-	-	0.025	0.025
Specific extinction area (m²/kg)	23.22	26.01	9.40	-	-	-	-4.68	-4.68
Carbon monoxide yield (kg/kg)	0.0404	0.0502	0.0557	-	-	-	0.0668	0.0668
Carbon dioxide yield (kg/kg)	0.92	0.58	0.46	-	-	-	0.38	0.38

Smoke results

Total smoke release: non-flaming phase (0 s - 17 s)	2.4 m²/m²
Total smoke release: flaming phase (17 s - 198 s)	21.5 m²/m²
Total smoke release: whole test (0 s - 198 s)	23.9 m²/m²

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Specimen information

E	13.1 MJ/kg	Specimen number	5	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	99.95 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	09:33
Date of report	08/01/2019

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.341 kPa
Relative humidity	28%

Initial conditions

Baseline ambient oxygen	20.811%
Baseline oxygen	20.960%
Baseline carbon dioxide	0.0475%
Mass at sustained flaming	99.7 g

Test times

Time to ignition	19 s
Time to flameout	86 s
End of test criterion	User entered
End of test time (for calculations)	206 s

Heat Release Results

THR (0-300)	-
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.39 MJ/kg

Test results (between 19 and 206 s)

Total heat release	4.4 MJ/m²
Total oxygen consumed	3.0 g
Mass lost	5.8 g
Average specific MLR	3.73 g/(s·m²)
Total smoke release	9.4 m²/m²
Total smoke production	0.1 m²
MAHRE	45.4 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	23.64	83.87	35
Effective heat of comb. (MJ/kg)	6.78	58.94	64
Mass loss rate (g/s)	0.031	0.232	55
Specific extinction area (m²/kg)	-39.60	1534.28	21
Carbon monoxide yield (kg/kg)	0.0575	148.5967	113
Carbon dioxide yield (kg/kg)	0.52	399.98	113

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 248 s	0 s - 248 s
Heat release rate (kW/m²)	58.25	35.03	24.44	-	-	-	18.78	18.78
Effective heat of comb. (MJ/kg)	14.92	9.35	6.96	-	-	-	6.15	6.15
Mass loss rate (g/s)	0.035	0.033	0.031	-	-	-	0.027	0.027
Specific extinction area (m²/kg)	-21.06	-24.87	-36.40	-	-	-	-51.95	-51.95
Carbon monoxide yield (kg/kg)	0.0406	0.0511	0.0570	-	-	-	0.0604	0.0604
Carbon dioxide yield (kg/kg)	1.06	0.68	0.53	-	-	-	0.47	0.47

Smoke results

Total smoke release: non-flaming phase (0 s - 19 s)	1.6 m²/m²
Total smoke release: flaming phase (19 s - 206 s)	9.4 m²/m²
Total smoke release: whole test (0 s - 206 s)	11.0 m²/m²

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Specimen information

E	13.1 MJ/kg	Specimen number	6	Conditioned?	Yes
Thickness	12 mm	Nominal duct flow rate	24 l/s	Temperature	23°C
Initial mass	100.95 g	Edge frame used?	Yes	RH	50%
Surface area	88.4 cm²	Grid used?	No		
Heat flux	50 kW/m²	Fixed to substrate?	Yes		
Separation	25 mm	Substrate	0.5 inch Ca Silicate		
Orientation	Horizontal	Manufacturer			
		Sponsor			

Test

Standard used	ASTM E1354
Date of test	08/01/2019
Time of test	09:44
Date of report	08/01/2019

Pre-test conditions

Ambient temperature	21°C
Ambient pressure	98.365 kPa
Relative humidity	28%

Test times

Time to ignition	19 s
Time to flameout	90 s
End of test criterion	User entered
End of test time (for calculations)	210 s

Apparatus specifications

C-factor	0.04371
Duct diameter	0.114 m
O2 delay time	15 s
CO2 delay time	15 s
CO delay time	15 s
OD corr. factor	1.0055

Initial conditions

Baseline ambient oxygen	20.801%
Baseline oxygen	20.950%
Baseline carbon dioxide	0.0486%
Mass at sustained flaming	100.7 g

Heat Release Results

THR (0-300)	-
THR (0-600)	-
THR (0-1200)	-
Fuel load	0.38 MJ/kg

Test results (between 19 and 210 s)

Total heat release	4.3 MJ/m²
Total oxygen consumed	2.9 g
Mass lost	6.2 g
Average specific MLR	3.83 g/(s·m²)
Total smoke release	27.8 m²/m²
Total smoke production	0.2 m²
MAHRE	43.5 kW/m²

	Mean	Peak	at time (s)
Heat release rate (kW/m²)	22.57	84.61	37
Effective heat of comb. (MJ/kg)	6.17	64.66	190
Mass loss rate (g/s)	0.032	0.212	77
Specific extinction area (m²/kg)	19.21	2025.45	20
Carbon monoxide yield (kg/kg)	0.0540	71.3903	137
Carbon dioxide yield (kg/kg)	0.49	226.03	137

Test averages

from ignition to ignition plus...	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 246 s	0 s - 246 s
Heat release rate (kW/m²)	56.70	33.84	23.77	-	-	-	18.20	18.20
Effective heat of comb. (MJ/kg)	12.56	8.37	6.43	-	-	-	5.59	5.59
Mass loss rate (g/s)	0.040	0.036	0.033	-	-	-	0.029	0.029
Specific extinction area (m²/kg)	35.45	32.96	21.21	-	-	-	18.10	18.10
Carbon monoxide yield (kg/kg)	0.0343	0.0461	0.0532	-	-	-	0.0564	0.0564
Carbon dioxide yield (kg/kg)	0.92	0.63	0.51	-	-	-	0.46	0.46

Smoke results

Total smoke release: non-flaming phase (0 s - 19 s)	5.0 m²/m²
Total smoke release: flaming phase (19 s - 210 s)	27.8 m²/m²
Total smoke release: whole test (0 s - 210 s)	32.8 m²/m²

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Summary

Heat flux	50 kW/m²	Surface area	88.4 cm²
Orientation	Horizontal	Retainer frame used?	Yes

Test averages

Test	t(ig) (s)	t(fo) (s)	t(end) (s)	HRR(peak) (kW/m²)	tpeak (s)	THR (MJ/m²)	HRR(60) (kW/m²)	HRR(180) (kW/m²)	HRR(300) (kW/m²)
Mean	**18.7**	**82.8**	**202.8**	**81.41**	**34.5**	**4.30**	**56.72**	**23.84**	**10.22**
1	21	72	192	80.80	34	3.88	54.09	21.74	14.28
2	19	89	209	85.84	35	5.15	63.61	28.45	18.48
3	17	82	202	78.47	34	4.24	55.47	23.46	14.97
4	17	78	198	74.87	32	3.81	52.23	21.15	13.61
5	19	86	206	83.87	35	4.42	58.25	24.44	0.00
6	19	90	210	84.61	37	4.31	56.70	23.77	0.00

Test	Flux (kW/m²)	t (mm)	Area (cm²)	m(i) (g)	m(s) (g)	m(f) (g)	Δm (g)	Ave MLR (g/s·m²)	EHC(av) (MJ/kg)
Mean		**12**		**100.8**	**100.7**	**94.8**	**5.9**	**3.8**	**6.42**
1	50	12	88.4	100.29	100.3	94.7	5.6	3.8	6.14
2	50	12	88.4	104.17	104.0	97.7	6.3	3.9	7.23
3	50	12	88.4	99.03	99.1	93.2	5.9	3.7	6.36
4	50	12	88.4	100.4	100.3	94.5	5.8	3.7	5.82
5	50	12	88.4	99.95	99.7	94.0	5.8	3.7	6.78
6	50	12	88.4	100.95	100.7	94.6	6.2	3.8	6.17

Test	THR(0-300) (MJ/m²)	THR(0-600) (MJ/m²)	THR(0-1200) (MJ/m²)	SPR(av) (m²/s)	SEA(av) (m²/kg)	Fuel load (MJ/kg)	MARHE (kW/m²)
Mean	-	-	-	**0.0006**	**19.10**	**0.38**	**44.38**
1	4.31	-	-	0.0015	46.40	0.34	43.04
2	5.52	-	-	0.0020	61.70	0.44	49.21
3	4.49	-	-	0.0006	18.22	0.38	43.67
4	4.11	-	-	0.0003	8.63	0.34	41.41
5	-	-	-	-0.0012	-39.60	0.39	45.43
6	-	-	-	0.0006	19.21	0.38	43.49

Test	Date	Specimen #	Line colour	Filename
1	08/01/2019	1		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-1.csv
2	08/01/2019	2		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-2.csv
3	08/01/2019	3		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-3.csv
4	08/01/2019	4		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-4.csv
5	08/01/2019	5		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-5.csv
6	08/01/2019	6		C:\CC5\Data\Vipeq Canada\103749915\103749915 Vipeq Corksheild E1354-6.csv

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

General Observations:

Ignition with orange flames. The heat release rate at 180 seconds for the first three specimens was not within 10% of the average heat release. Therefore, an addition three specimens were run and the average of the 6 specimens was used.

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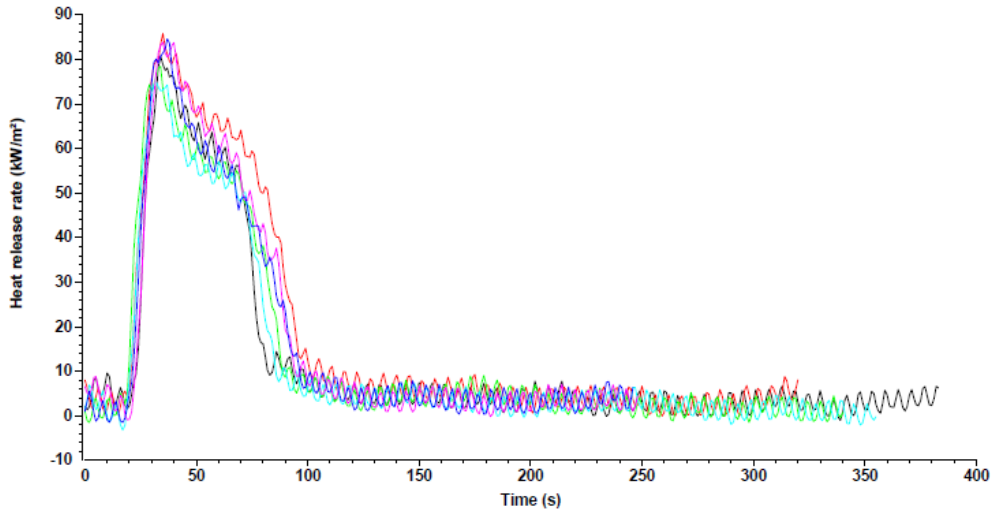
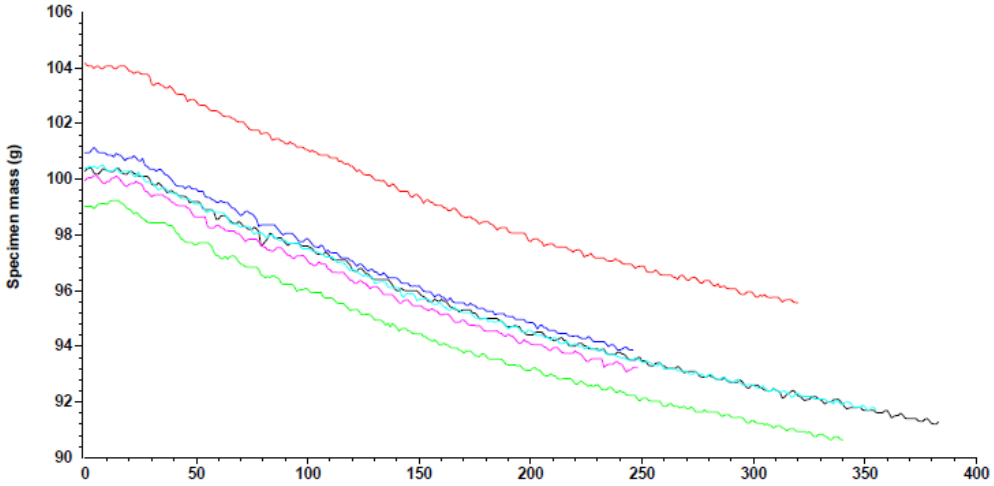
Graphs:





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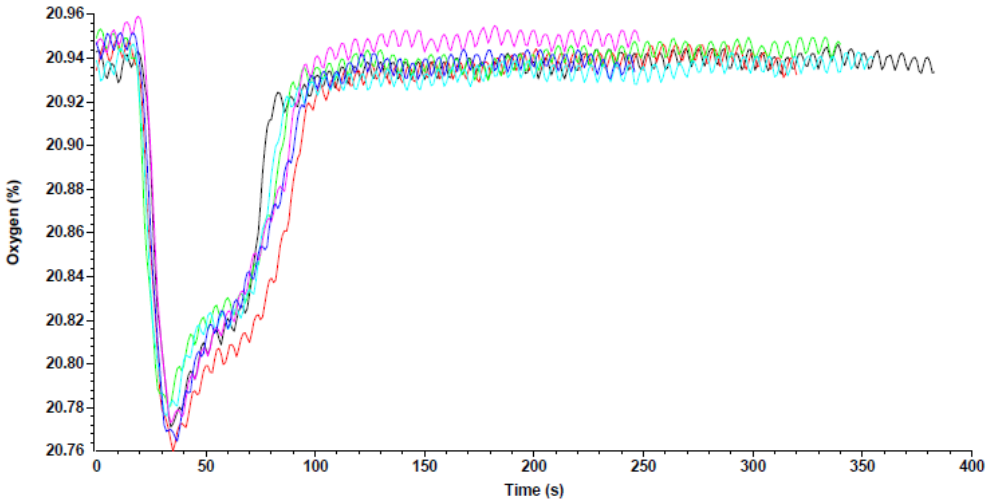

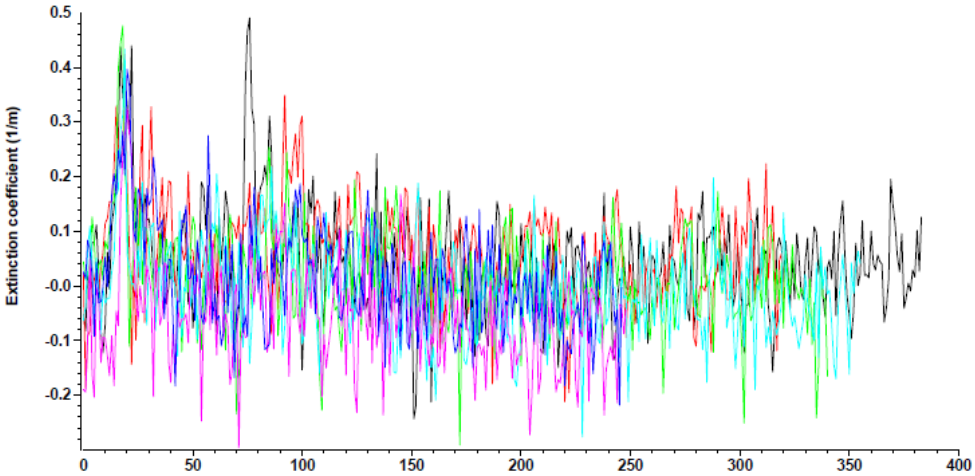

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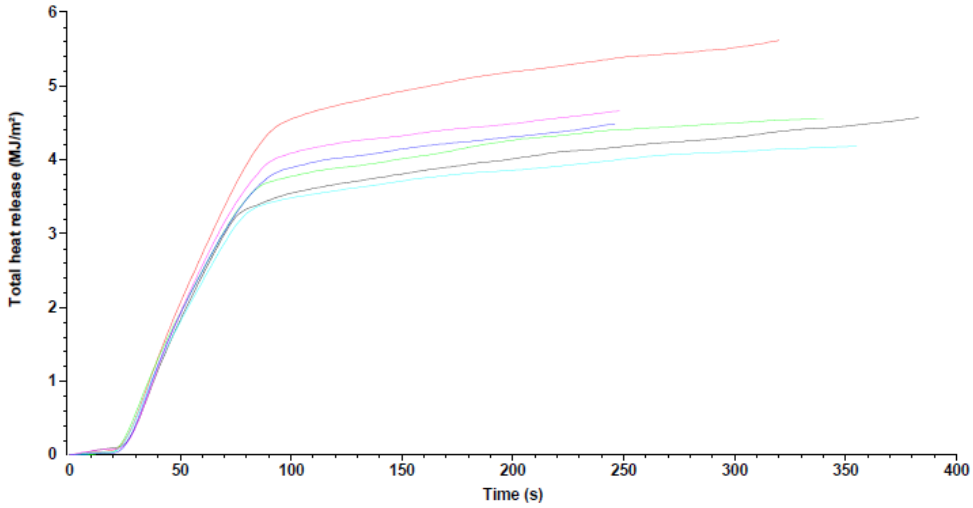

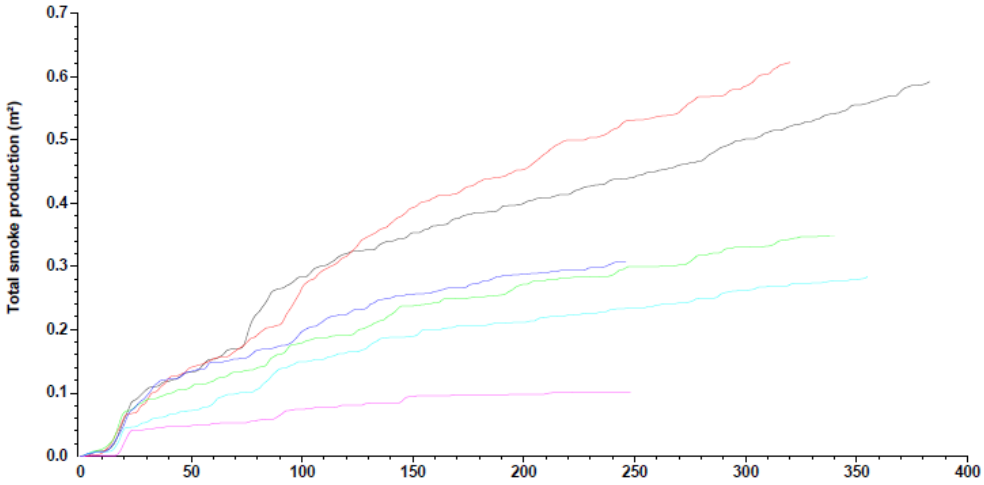

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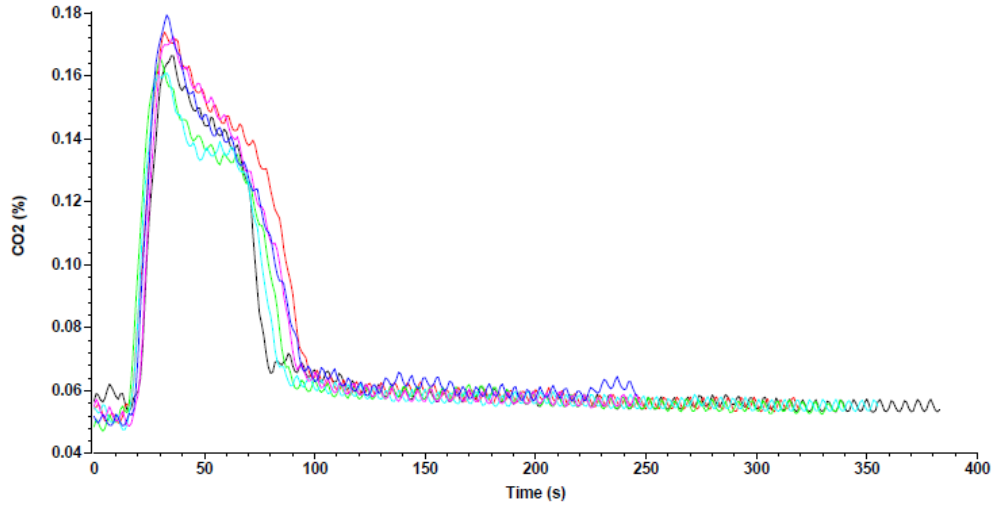

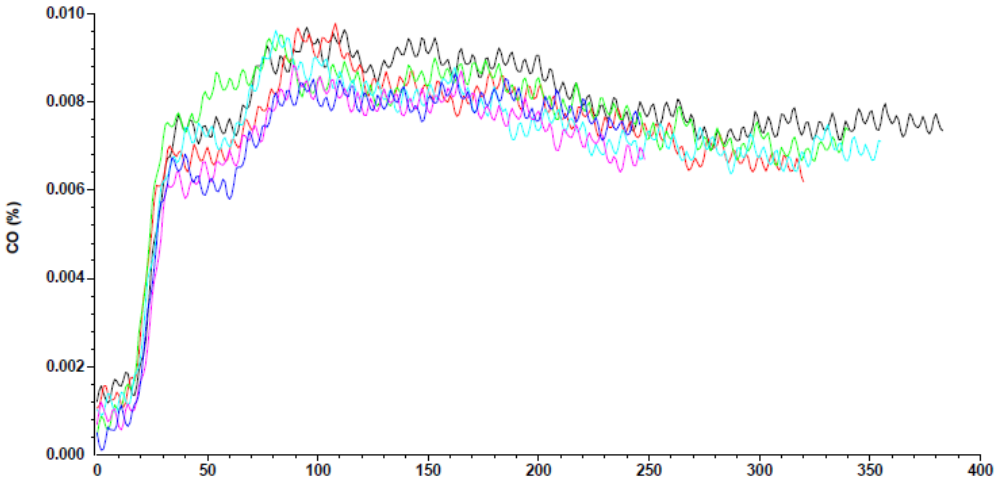

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SECTION 9
CONCLUSION

There are no pass/fail criteria with the ASTM E1354 standard.

There were no deviations from the test standard.

SECTION 10
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	01/08/19	15	Original Report Issue