

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]

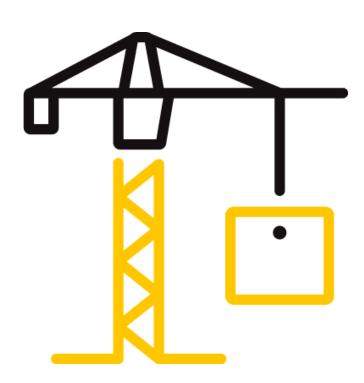
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TEST REPORT FOR VIPEQ CANADA

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	1

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 \pm 3°C and a relative humidity of 50 \pm 5%.



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SECTION 8

TEST RESULTS

Specimen informa E Thickness Initial mass Surface area Heat flux Separation Orientation	13.1 MJ/kg 12 mm 100.29 g 88.4 cm ² 50 kW/m ² 25 mm Horizontal	Nom Edge Grid Fixed Subs	frame used? I to sub trate ufacture	t flow rate used? strate?	1 24 l/s Yes No Yes 0.5 inch	Ca Silicati	Conditior Tempera RH	ture 2	es 3°C 60%	
Test Standard used Date of test Time of test Date of report	ASTM E135 08/01/2019 08:41 08/01/2019	64 Amb Amb Rela	Pre-test conditions Ambient temperature 21°C Ambient pressure 98.256 kPa Relative humidity 28%			66 kPa	Test time Time to i Time to f End of te End of te	gnition lameout st criterior st time	21 s 72 s 1 User 192	r entered
Apparatus specific C-factor Duct diameter O2 delay time CO2 delay time CO delay time OD corr. factor	0.04371 0.114 m 15 s 15 s 15 s 1.0055	Base Base Base	Initial conditions Baseline ambient oxyg Baseline oxygen Baseline carbon dioxic Mass at sustained flar		20.94 0.046	20.949% 0.0463%		Heat Release Results THR (0-300)		
Test results (betw Total heat release Total oxygen consun Mass lost Average specific MLF Total smoke release Total smoke product MAHRE	3.9 MJ/ned 2.7 g 5.6 g R 3.80 g/(37.1 m ²	m² (s·m²) :/m²	Eff Ma Spe Car	at release r ective heat ss loss rate ecific extinc rbon mono rbon dioxide	of comb. (g/s) tion area (ide yield)	(MJ/kg) (m²/kg) (kg/kg)	Mean 22.70 6.14 0.032 46.40 0.0561 0.48	Peak 80.80 73.38 0.350 2555.24 31.0653 79.32	at ti 34 54 78 147 183 114	me (s)
Test averages from ignition to ig Heat release rate (k) Effective heat of con Mass loss rate (g/s) Specific extinction ar Carbon monoxide yiel Carbon dioxide yiel	N/m²) nb. (MJ/kg) rea (m²/kg) eld (kg/kg)	54.09 3 11.41 7 0.042 0 59.77 5 0.0361 0	2 min 30.52 7.55 0.035 66.77 0.0494 0.57	3 min	4 min	5 min - - - - -	6 min - - - - - -	11. 4.4 0.0 48.	3 s .94 .99 .23 .74	0 s - 383 s 11.94 4.49 0.023 48.74 0.0704 0.39

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.

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Specimen informa	ation					
E Thickness Initial mass Surface area Heat flux Separation Orientation	13.1 MJ/kg 12 mm 104.17 g 88.4 cm² 50 kW/m² 25 mm Horizontal	Specimen number Nominal duct flow rate Edge frame used? Grid used? Fixed to substrate? Substrate Manufacturer Sponsor	2 24 l/s Yes No Yes 0.5 inch Ca Silica	Condition Temper RH	ature 2	Yes 23°C 50%
Test		Pre-test conditions		Test tii	mes	
Standard used Date of test Time of test Date of report	ASTM E1354 08/01/2019 08:53 08/01/2019	Ambient temperature Ambient pressure Relative humidity	21°C 98.295 kPa 28%	Time to End of t	Time to ignition 19 s Time to flameout 89 s End of test criterion User entere End of test time 209 s (for calculations)	
Apparatus specifi	cations	Initial conditions		`		
C-factor Duct diameter O2 delay time CO2 delay time CO delay time OD corr. factor	0.04371 0.114 m 15 s 15 s 15 s 1.0055	Baseline ambient oxyger Baseline oxygen Baseline carbon dioxide Mass at sustained flamin	20.951% 0.0474%	Heat R THR (0- THR (0- THR (0- Fuel loa	-600) - -1200) -	sults 5.52 MJ/m² 0.44 MJ/kg
Test results (betw	veen 19 and 209 s)					
Total heat release Total oxygen consur Mass lost Average specific MLI Total smoke release Total smoke product MAHRE	6.3 g R 3.85 g/(s·m²) 47.7 m²/m²	Mass loss rate Specific extinct	of comb. (MJ/kg) (g/s) ion area (m²/kg) de yield (kg/kg)	Mean 27.12 7.23 0.033 61.70 0.0523 0.52	Peak 85.84 52.34 0.199 3816.23 10.7373 94.44	at time (s) 35 75 29 126 117 76

Test averages

rest 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 (m ² /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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Specimen informa E	ation 13.1 MJ/kg	l e	oecimen n	umbor	3		Condition	ed? Ye	200	
Thickness	13.1 MJ/Kg 12 mm			umber ct flow rate	3 24 l/s		Temperat		es B°C	
Initial mass	99.03 a		dae frame		Yes		RH)%	
Surface area	88.4 cm ²		id used?	uscu.	No		10.1		,,,,	_
Heat flux	50 kW/m ²		xed to sub	strate?	Yes					
Separation	25 mm	St	ıbstrate		0.5 inch	Ca Silicat	te			
Orientation	Horizontal		anufactur oonsor	er						
Test		Pi	re-test co	onditions			Test tim	es		_
Standard used	ASTM E135	i4 Ar	nbient ter	nperature	21°C		Time to ig	gnition	17 s	
Date of test	08/01/2019		nbient pre)6 kPa	Time to fl		82 s	
Time of test	09:08	Re	elative hui	nidity	28%			st criterion		ı
Date of report	08/01/2019	9					End of te		202 s	
Apparatus specifi	cations	Ir	nitial con	ditions			(for calcu		_	_
C-factor	0.04371	Ba	aseline am	bient oxyge	n 20.80)3%	Heat Re	lease Resi		
Duct diameter	0.114 m		aseline ox		20.95		THR (0-3		49 MJ/m²	
O2 delay time	15 s	Ba	aseline car	bon dioxide	0.046	66%	THR (0-6	00) -		
CO2 delay time	15 s	M	ass at sus	tained flami	ng 99.1	g	THR (0-1			
CO delay time	15 s						Fuel load	0.	38 MJ/kg	
OD corr. factor	1.0055									
Total heat release Total oxygen consul Mass lost Average specific ML Total smoke release Total smoke produc MAHRE	5.9 g R 3.73 g/(25.7 m²	s·m²) :/m²	Ef Ma Sp Ca	eat release r fective heat ass loss rate ecific extino irbon mono irbon dioxid	of comb. (g/s) tion area (ide yield	(MJ/kg) (m²/kg) (kg/kg)	Mean 22.94 6.36 0.032 18.22 0.0587 0.49	Peak 78.47 48.36 0.166 1873.28 11.9397 42.53	at time (s) 34 46 58 194 194 32	
Test averages								00	0.5	
from ignition to ig	nition plus	1 min	2 min	3 min	4 min	5 mir	n 6 min	0 s 340		
Heat release rate (k	W/m²)	55.47	32.63	23.46	-	-	-	13.3	37 13.37	
Effective heat of cor		12.85	7.81	6.25	-	-	-	4.79		
Mass loss rate (g/s)		0.038	0.036	0.033	-	-	-	0.02		
Specific extinction a		25.51	22.67	18.30	-	-	-	14.1		
Carbon monoxide yi		0.0433	0.0491	0.0564	-	-	-	0.06		
Carbon dioxide yield	l (kg/kg)	0.92	0.58	0.48	-	-	-	0.41	0.41	
Smoke results										
Total smoke release				5.1 m ² /m ²						
Total smoke release				25.7 m ² /n						
Total smoke release: whole test (0 s - 202 s)				30.8 m ² /n	14					



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Specimen informa	tion 13,1 MJ/ka	ı İsi	oecimen n	umber	4		Conditione	d? Yes	
Thickness	12 mm		Nominal duct flow rate 24 l/s				Temperatu	ire 23°C	
Initial mass	100.4 g		dge frame	used?	Yes		RH	50%	
Surface area	88.4 cm ²	-	rid used?		No		'		
Heat flux	50 kW/m²	1	xed to sub	ostrate?	Yes	C- Cili	_		
Separation Orientation	25 mm Horizontal	-	ubstrate anufactur	or	0.5 Inch	Ca Silicat	e		
Orientation	HOHZOHIAI		onsor	-I					
Test		P	re-test co	onditions			Test time	s	
Standard used	ASTM E135		mbient ter		21°C		Time to igi		-
Date of test	08/01/2019		mbient pre			22 kPa	Time to fla		-
Time of test	09:22		elative hui	nidity	28%		End of test		er entered
Date of report	08/01/2019	9					End of test (for calcula		3 S
Apparatus specific		-	nitial con				<u> </u>		
C-factor	0.04371			ibient oxyge				ease Results	
Duct diameter	0.114 m		aseline ox		20.94		THR (0-30	•	IJ/m²
O2 delay time	15 s	1 -		bon dioxide			THR (0-60	•	
CO2 delay time CO delay time	15 s 15 s	l M	ass at sus	tained flami	ng 100.3	s g	THR (0-12) Fuel load	00) - 0.34 M	11/kg
OD corr. factor	1.0055						ruei ioau	0.34 M	J/Kg
OD COIT. Idector	1.0055								
Test results (betw	een 17 and 1	198 s)	_						
							Mean I	Peak at t	ime (s)
Total heat release	3.8 MJ/	m²		eat release r				74.87 32	
Total oxygen consun				fective heat		(MJ/kg)		53.04 28	
Mass lost	5.8 g	(a.m. 2)		Mass loss rate (g/s)				0.203 142	
Average specific MLF Total smoke release	3.66 g/ 21.5 m ²			Specific extinction area (m²/kg) Carbon monoxide yield (kg/kg)				2034.02 94	
Total smoke product		-/111-		irbon mono) irbon dioxid				l.6542 133 l5.37 59	
MAHRE	41.4 kV	//m²	"	II DOIT GIOXIG	e yielu (Kţ	J/Kg)	0.40	15.57 59	
Test averages								1	
from ignition to ig	nition plus	1 min	2 min	3 min	4 min	5 min	6 min	0 s - 355 s	0 s - 355 s
Heat release rate (k)	•	52.23	30.07	21.15	-	-	_	11.67	11.67
Effective heat of con		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 ar	ea (m²/kg)	23.22	26.01	9.40	-	-	-	-4.68	-4.68
Carbon monoxide yie		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:				2.4 m ² /m ²					
Total smoke release:		•		21.5 m ² /m					
Total smoke release: whole test (0 s - 198 s)				23.9 m ² /m) ²				



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Specimen informa E Thickness Initial mass Surface area Heat flux	13.1 MJ/kg 12 mm 99.95 g 88.4 cm ² 50 kW/m ²	No Ed Gr	ecimen n ominal du ge frame id used? ked to sub	ct flow rate used?	5 24 l/s Yes No Yes		Conditione Temperatu RH		
Separation Orientation	25 mm Horizontal	Su Ma	bstrate anufacture onsor			Ca Silica	te		
Test Standard used	ASTM E135	1		onditions nperature	2100		Test time		c
Date of test Time of test Date of report	08/01/2019 09:33 08/01/2019) An	nbient pre lative hur	essure	sure 98.341 kPa		Time to fla End of tes	Time to ignition 19 s Time to flameout 86 s End of test criterion User entere End of test time 206 s	
Apparatus specifi	cations	In	itial con	ditions			(IOI Calcul	auoris)	
C-factor Duct diameter O2 delay time CO2 delay time CO delay time OD corr. factor	0.04371 0.114 m 15 s 15 s 15 s 1.0055	Ba Ba	seline oxy seline car	ibient oxyge ygen 'bon dioxide tained flami	20.96 0.047	0% 5%	Heat Rele THR (0-30 THR (0-60 THR (0-12 Fuel load	0) -	IJ/kg
Test results (bety	ween 19 and 2	206 s)							
Total heat release Total oxygen consu Mass lost Average specific ML Total smoke release Total smoke produc MAHRE	5.8 g R 3.73 g/(: 9.4 m²/	(s·m²) m²	Eff Ma Sp Ca	eat release r fective heat ass loss rate ecific extino arbon monos arbon dioxide	of comb. (g/s) tion area ((ide yield ((MJ/kg) (m²/kg) kg/kg)	23.64 6.78 0.031 -39.60 0.0575	Peak at t 83.87 35 58.94 64 0.232 55 1534.28 21 148.5967 113 399.98 113	
Test averages								1	
from ignition to ignition to ignition to ignition to ignition to ignition the ignition to ignition in the ignition is seen in	kW/m²) mb. (MJ/kg) irea (m²/kg) ield (kg/kg)	1 min 58.25 14.92 0.035 -21.06 0.0406 1.06	2 min 35.03 9.35 0.033 -24.87 0.0511 0.68	3 min 24.44 6.96 0.031 -36.40 0.0570 0.53	4 min	5 mir - - - - -	6 min - - - - - -	0 s - 248 s 18.78 6.15 0.027 -51.95 0.0604 0.47	0 s - 248 s 18.78 6.15 0.027 -51.95 0.0604 0.47
Smoke results Total smoke release: non-flaming phase (0 s - 19 s) Total smoke release: flaming phase (19 s - 206 s) Total smoke release: whole test (0 s - 206 s)				1.6 m ² /m ² 9.4 m ² /m ² 11.0 m ² /m	!				



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Test Standard used Date of test

Time of test

Date of report

Specimen information

E	13.1 MJ/kg
Thickness	12 mm
Initial mass	100.95 g
Surface area	88.4 cm ²
Heat flux	50 kW/m ²
Seneration	25 mm

Specimen number	6
Nominal duct flow rate	24 l/s
Edge frame used?	Yes
Grid used?	No 1.
Fixed to substrate?	Yes
Substrate	0.5 inch Ca Silicate

Conditioned?	Yes
Femperature	23°C
RH	50%

Separation	25 mm
Orientation	Horizontal

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08/01/2019

Substrate	
Manufacturer	
Sponsor	

Pre-test conditions	
Ambient temperature Ambient pressure Relative humidity	21°C 98.365 kPa 28%

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

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 conditionsBaseline ambient oxygen 20.801%

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

Heat Release Results

ricat recease	resul.
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/m ²
Total oxygen consumed	2.9 g
Mass lost	6.2 g
Average specific MLR	3.83 g/(s·m ²)
Total smoke release	27.8 m ² /m ²
Total smoke production	0.2 m ²
MAHRE	43.5 kW/m ²

	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 (m ² /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 (m ² /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 m ² /m ²
Total smoke release: 1	flaming phase (19 s - 210 s)	27.8 m ² /m ²
Total smoke release:	whole test (0 s - 210 s)	32.8 m ² /m ²



TEST REPORT FOR VIPEQ CANADA

50 kW/m²

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Summary	,
Heat flux	

Test av	verages										
Test					HRR(60) (kW/m²)	HRR(180) (kW/m²)	HRR(300) (kW/m²)				
Mean	18.7	82.8	8	202.8	81	.41	34.5	4.30	56.72	23.84	10.22
1 2 3	21 19	72 89		192 209		.84	34 35	3.88 5.15	54.09 63.61	21.74 28.45	14.28 18.48
4 5	17 17 19	82 78 86		202 198 206		.47 .87 .87	34 32 35	4.24 3.81 4.42	55.47 52.23 58.25	23.46 21.15 24.44	14.97 13.61 0.00
5	19	90		210	84	.61	37	4.31	56.70	23.77	0.00
Test	Flux (kW/r		t (mm)		rea 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 2 3 4	50 50 50 50 50		12 12 12 12 12	8 8 8	8.4 8.4 8.4 8.4 8.4 8.4	100.29 104.17 99.03 100.4 99.95 100.95	100.3 104.0 99.1 100.3 99.7 100.7	94.7 97.7 93.2 94.5 94.0 94.6	5.6 6.3 5.9 5.8 5.8 6.2	3.8 3.9 3.7 3.7 3.7 3.8	6.14 7.23 6.36 5.82 6.78 6.17

Surface area

88.4 cm²

Test	(MJ/m ²)	(MJ/m ²)	(MJ/m ²)	(m ² /s)	(m²/kg)	(MJ/kg)	(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.



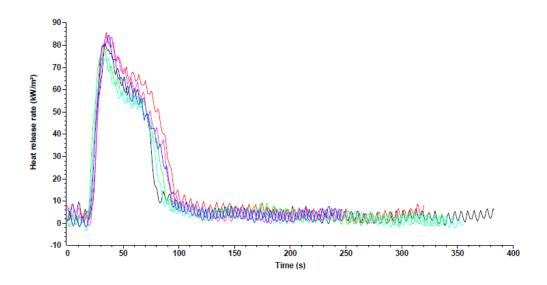
8431 Murphy Drive Middleton, WI 53562 Telephone: 608-836-4400 Facsimile: 608-831-9279 www.intertek.com/building

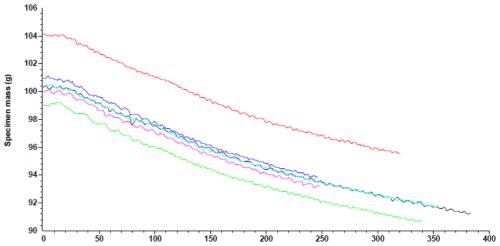
TEST REPORT FOR VIPEQ CANADA

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Date: 01/08/19

Graphs:





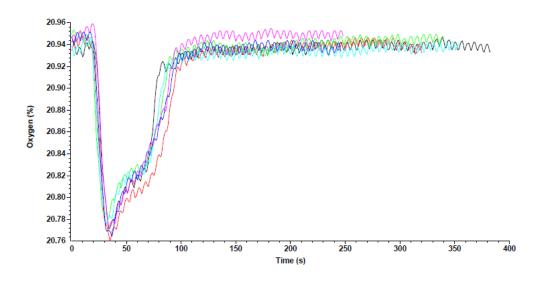


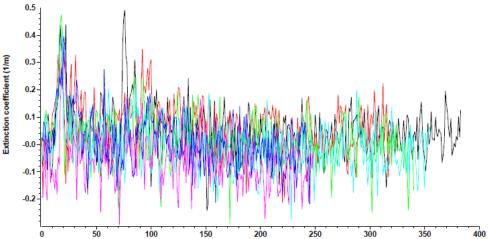
8431 Murphy Drive Middleton, WI 53562 Telephone: 608-836-4400 Facsimile: 608-831-9279 www.intertek.com/building

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Report No.: 10374415MID-001

Date: 01/08/19





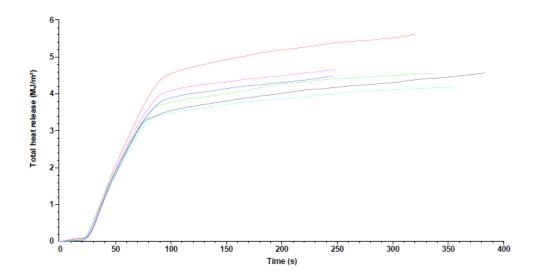
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

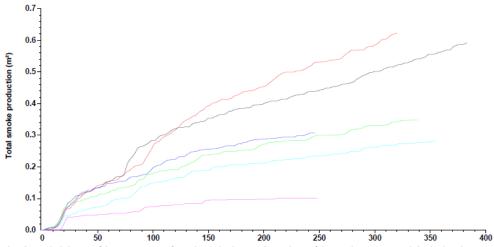


TEST REPORT FOR VIPEQ CANADA

Report No.: 10374415MID-001

Date: 01/08/19





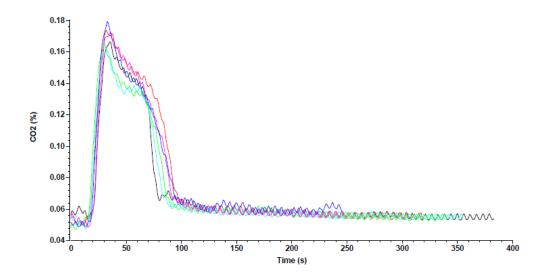
The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

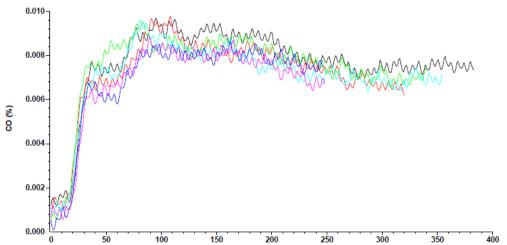


TEST REPORT FOR VIPEQ CANADA

Report No.: 10374415MID-001

Date: 01/08/19





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.



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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