

Report # K-419949-1706P48-R00

Samples Received:
Jun-16-16

Samples Tested:
Jun-20-17

Test Report

Kinectrics Inc., 800 Kipling Avenue, Unit 2
Toronto, Ontario, Canada
Tel: 416-207-6000, www.kinectrics.com



Tested for

ArcWear
3018 Eastpoint Parkway
Louisville, KY 40223

Test item description

11.3 oz/yd² 383 g/m² PVC Coated Spunlace,
67% Meta-aramid 33% Para-aramid, Yellow,
AAD 11.5 oz/yd² 390 g/m²,
ArcWear# 1706P48

Reference Standard

ASTM F1891-12
Standard Specification for Arc and Flame Resistant Rainwear

Test Parameters:

Test current: 8 kA	Number of samples analysed: 39
Arc Gap: 30 cm	
Distance to Fabric: 30 cm	Incident Energy Range: 7 to 58 cal/cm ²

Arc Rating, ATPV = 11 Cal/cm²

Material Break-Open, Ebt = 51 Cal/cm²

Heat Attenuation Factor, HAF = 86%

No variations to standard method noted.

Samples tested as received, pre-test laundering as required by standard was arranged by client.

Test Summary

The Arc Rating of this material is intended for use as part of a flame resistant garment or system for workers exposed to electric arcs. The test result is applicable only to the test item as described; other fiber blends, weaves, finishing or dye may have different protection level. The test articles are tested as received; no test is done to validate the fiber content or composition. The Arc Rating was calculated based on the data obtained and analysed in accordance with the latest version of the applicable standards. The individual test sheets, graphs, photographs of the samples and video of every test are provided in digital format to the Client for review.

The arc testing performed to the above mentioned Standard is accredited by the Standards Council of Canada (SCC) to conform to the requirements of CAN-P-4E (ISO/IEC 17025:2005). Accreditation by the Standards Council of Canada (SCC) is a mark of competence and reliability recognized throughout the world.

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Note: The test performed does not apply to electrical contact or electrical shock hazard.

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Prepared by:

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Note: For verification about results in this report, please forward copy of the report or inquiry to hcl@kinectrics.com

Date:
Jun-20-17

Determination of ATPV by performing logistic regression on the panel burn response as indicated in Summary Table

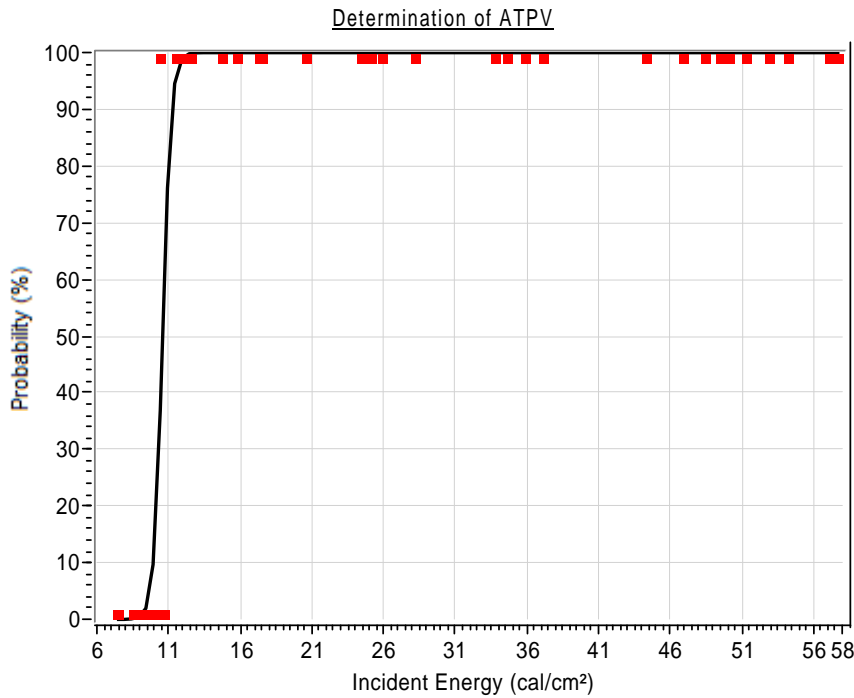


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Test Performed in accordance with: ASTM F1891-12

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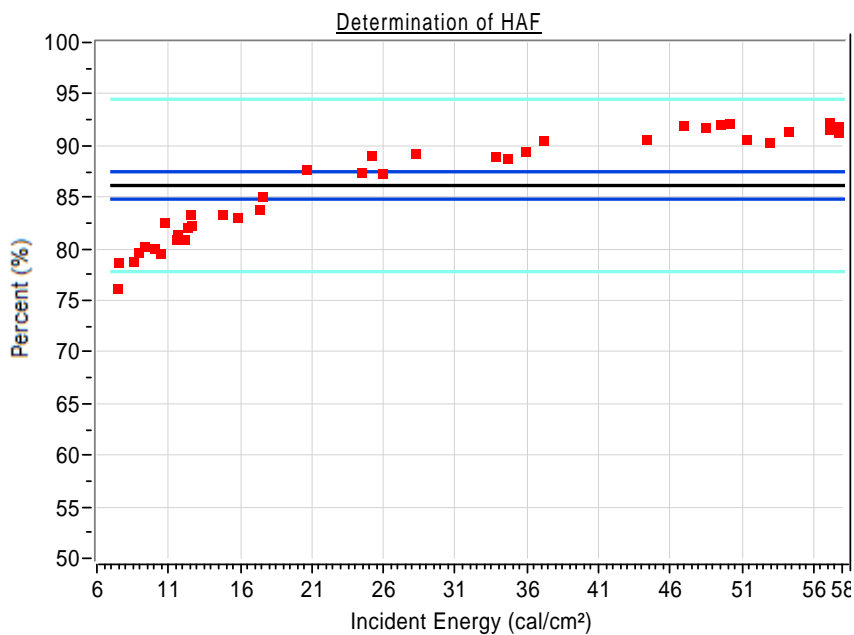


ATPV = 11 cal/cm²

Probability	Ei
5%	9.6
10%	9.9
20%	10.1
30%	10.3
40%	10.5
50%	10.6
60%	10.7
70%	10.8
80%	11.0
90%	11.3

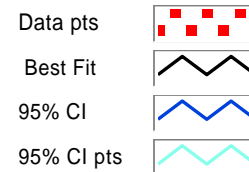
(Note: ATPV is reported to nearest integer for ratings above 10 cal/cm²)

Total points analyzed = 39
Points above Stoll = 32
Points above mix zone = 31
Points below mix zone = 6
Pts within 20% = 12
Pts in mix zone = 2



HAF = 86 %

Confidence Intervals
95% CI = 84.7 , 87.3



Date:
Jun-20-17

Determination of Ebt by performing logistic regression on the panel
break-open response as indicated in Summary Table



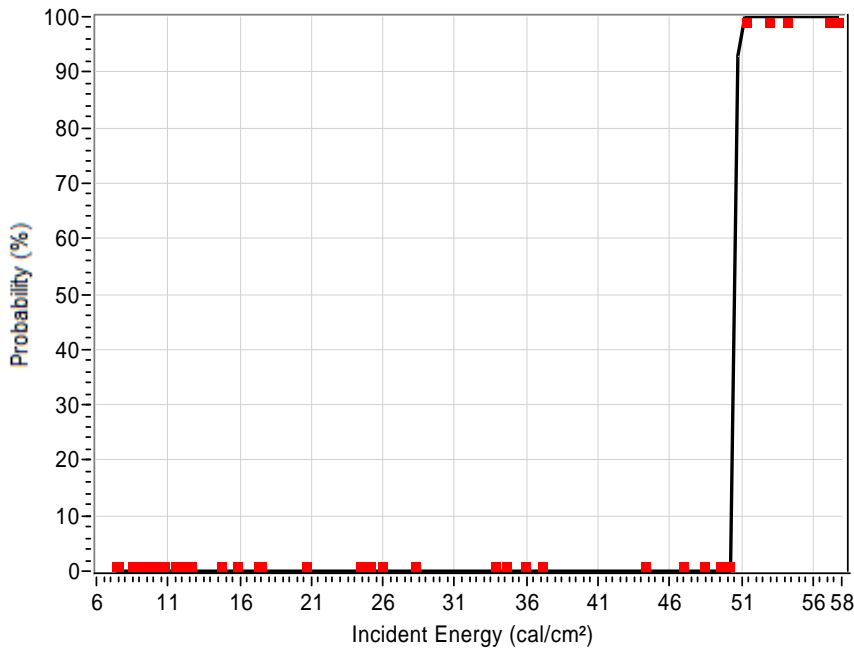
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Determination of Ebt, 50% of Probability of Breakopen



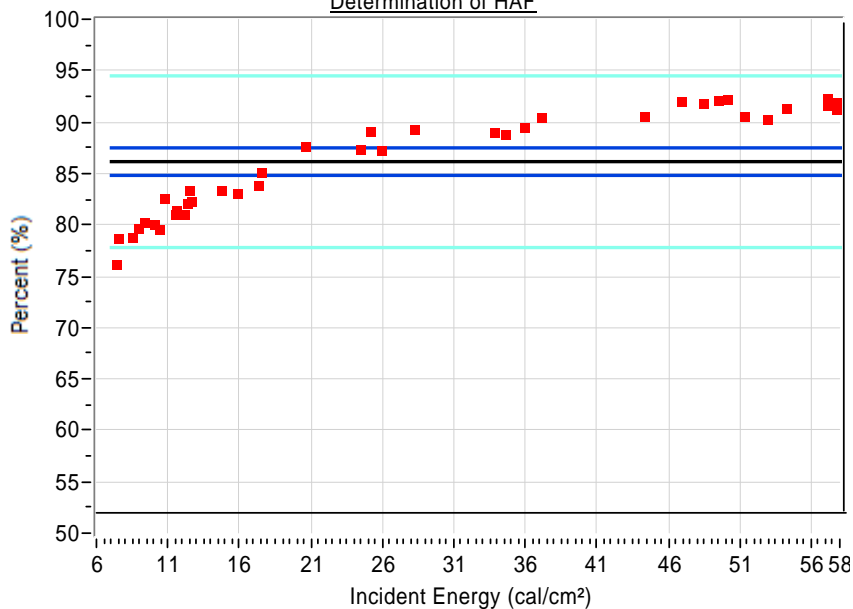
Ebt = 51 cal/cm²

Probability	Ei
5%	50.3
10%	50.3
20%	50.3
30%	50.4
40%	50.5
50%	50.5
60%	50.6
70%	50.6
80%	50.7
90%	50.7

(Note: Ebt is reported to nearest integer for ratings above 10 cal/cm²)

Total points analyzed = 39
Points Break-Open = 7
Points above mix zone = 7
Points below mix zone = 32
Pts within 20% = 12
Pts in mix zone = 0

Determination of HAF



HAF = 86 %

Confidence Intervals
95% CI = 84.7 , 87.3

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Summary of Measured Energy and Observations



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	Test #	Panel	Test Current A	Cycles of 60Hz	Ei Cal/cm ²	SCD Cal/cm ²	HAF %	>Stoll Y/N	Break Open Y/N	Ablation Y/N	After Flame sec.	Omit Y/N	Comment
1	K-419949-3455	A	8118	20.3	17.3	0.4	83.9	Yes	N	-	0	No	
2	K-419949-3455	B	8118	20.3	15.8	0.2	83.1	Yes	N	-	0	No	
3	K-419949-3455	C	8118	20.3	17.5	0.2	85.1	Yes	N	-	0	No	
4	K-419949-3456	A	8192	15.3	10.7	-0.1	82.6	No	N	-	0	No	* No melting, dripping, or significant shrinkage. Moderate charring and very little embrittlement.
5	K-419949-3456	B	8192	15.3	11.5	0.1	81.0	Yes	N	-	0	No	* No melting, dripping, or significant shrinkage. Moderate charring and very little embrittlement.
6	K-419949-3456	C	8192	15.3	14.7	0.5	83.4	Yes	N	-	0	No	
7	K-419949-3457	A	8199	12.3	8.9	-0.2	79.7	No	N	-	0	No	
8	K-419949-3457	B	8199	12.3	12.5	0.1	83.4	Yes	N	-	0	No	
9	K-419949-3457	C	8199	12.3	9.3	-0.1	80.3	No	N	-	0	No	
10	K-419949-3458	A	8248	10.3	7.5	-0.3	78.7	No	N	-	0	No	
11	K-419949-3458	B	8248	10.3	7.4	-0.2	76.2	No	N	-	0	No	
12	K-419949-3458	C	8248	10.3	8.5	-0.1	78.8	No	N	-	0	No	
13	K-419949-3459	A	8181	14.8	12.1	0.1	81.0	Yes	N	-	0	No	
14	K-419949-3459	B	8181	14.8	12.6	0.1	82.3	Yes	N	-	0	No	
15	K-419949-3459	C	8181	14.8	12.3	0.1	82.1	Yes	N	-	0	No	
16	K-419949-3460	A	8181	13.8	10.0	-0.1	80.1	No	N	-	0	No	
17	K-419949-3460	B	8181	13.8	11.6	0.0	81.4	Yes	N	-	0	No	
18	K-419949-3460	C	8181	13.8	10.4	0.2	79.6	Yes	N	-	0	No	
19	K-419949-3461	A	8033	28.2	20.6	0.1	87.7	Yes	N	-	0	No	
20	K-419949-3461	B	8033	28.2	25.9	0.9	87.3	Yes	N	-	1	No	* No melting, dripping, or significant shrinkage. Severe charring and slight embrittlement.
21	K-419949-3461	C	8033	28.2	25.1	0.5	89.1	Yes	N	-	0	No	* No melting, dripping, or significant shrinkage. Severe charring and slight embrittlement.
22	K-419949-3462	A	8057	35.2	24.4	0.6	87.4	Yes	N	-	0	No	
23	K-419949-3462	B	8057	35.2	33.8	1.5	89.0	Yes	N	-	0	No	
24	K-419949-3462	C	8057	35.2	28.2	0.6	89.3	Yes	N	-	0	No	
25	K-419949-3463	A	8026	45.2	37.1	1.2	90.5	Yes	N	-	0	No	
26	K-419949-3463	B	8026	45.2	35.9	1.8	89.5	Yes	N	-	0	No	
27	K-419949-3463	C	8026	45.2	34.6	1.7	88.8	Yes	N	-	0	No	
28	K-419949-3464	A	8000	60.3	44.3	2.2	90.6	Yes	N	-	0	No	
29	K-419949-3464	B	8000	60.3	48.4	2.0	91.8	Yes	N	-	0	No	
30	K-419949-3464	C	8000	60.3	46.9	1.7	92.0	Yes	N	-	0	No	
31	K-419949-3465	A	7991	75.3	57.8	2.8	91.9	Yes	Y	-	0	No	
32	K-419949-3465	B	7991	75.3	57.7	3.1	91.3	Yes	Y	-	0	No	
33	K-419949-3465	C	7991	75.3	54.2	2.8	91.4	Yes	Y	-	0	No	
34	K-419949-3466	A	8006	70.4	49.5	1.8	92.1	Yes	N	-	2	No	
35	K-419949-3466	B	8006	70.4	57.1	2.8	91.6	Yes	Y	-	1.5	No	
36	K-419949-3466	C	8006	70.4	57.1	2.5	92.3	Yes	Y	-	2	No	
37	K-419949-3467	A	8011	68.4	50.1	1.7	92.2	Yes	N	-	2.5	No	

No evidence of melting, dripping or ignition within ± 1 cal/cm² or at > 2X ATPV. 7 samples exhibited afterflame during testing with an average duration of 1.7 seconds.