

Date:
May 5, 2009

Report #
K-418157

High Current Test Laboratory
Kinectrics Inc., Canada
Test Summary



Client

ArcWear.com

Fabric description

Indura Ultrasoft Style 451, 9.0 oz/yd² 88% Cotton/12% Nylon, Navy, Laundered weight 9.8 oz/yd² over DRIFIRE Style 69265-10000005FHO, 8.61 oz/yd² Comfort Mesh, 85% Protex M (Modacrylic), 15% Tencel (Viscose), HV Orange, Laundered weight 9.5 oz/yd²

Reference Standard

ASTM F1959/F1959M-06ae1 Standard Test Method for Determining the Arc Rating of Materials for Clothing

Test Parameters:

Test current: 8kA
Distance to Fabric: 12 inches
Arc Gap: 12 inches

Number of samples analysed: 24
Incident Energy Range: 13 to 38 cal/cm²

Summary

The arc rating of this material is intended for use as flame resistant clothing for workers exposed to electric arcs. The material used in this test method are in the form of flat specimens, actual performance of the complete garment may vary depending on the final design and assembly of the garment. This test method does not apply to the electrical contact or electrical shock hazard.

Based on the data obtained and analysed in accordance with the latest version of the applicable standards, the following Arc Rating was calculated.

**Arc Thermal Performance Value, ATPV = 32.7 Cal/cm²
Heat Attenuation Factor, HAF = 79.1%**

The measured data and observations of the test samples after the arc exposure were collected and summarized in the attached table. The graphs and statistics on the attached sheets provide more detailed information to better understand the Arc Rating assigned to this item. The client shall review this full report, the video recordings of the arc exposure and the photographs of the samples after the test to determine if the material meets the intended specification.

Test performed by:

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ASTM F1959/F1959M-06ae1
Standard Test Method for Determining the Arc Rating of Materials for Clothing



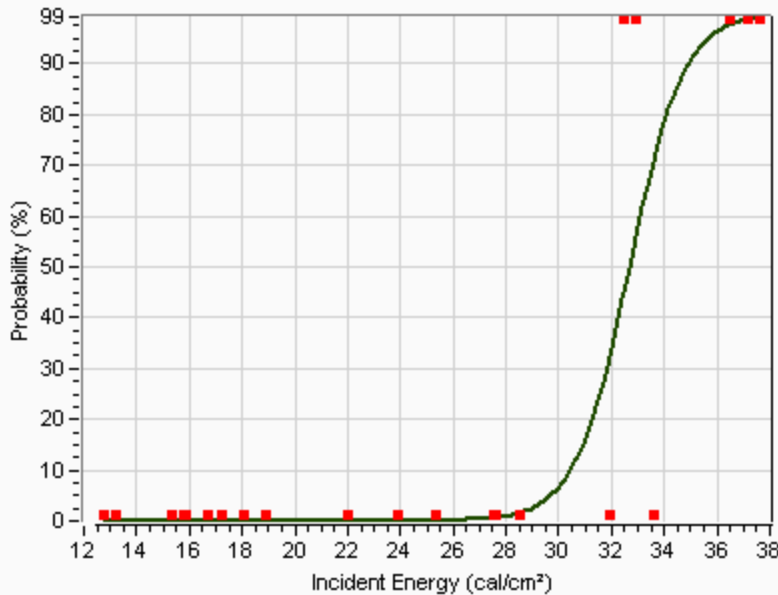
Client: ArcWear.com

Fabric:

Description:

Indura Ultrasoft Style 451, 9.0 oz/yd² 88% Cotton/12% Nylon, Navy, Laundered weight 9.8 oz/yd² over DRIFIRE Style 69265-1000005FHO, 8.61 oz/yd² Comfort Mesh, 85% Protex M (Modacrylic), 15% Tencel (Viscose), HV Orange, Laundered weight 9.5 oz/yd²

Determination of ATPV, 50% Probability of 2nd Degree Burn

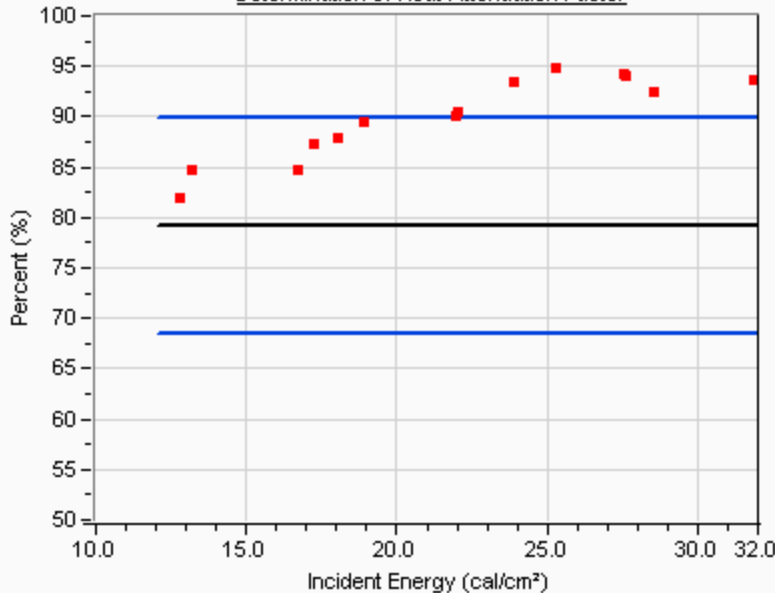


ATPV = 32.7 cal/cm²

Probability of Burn	Ei
5%	29.7
10%	30.4
20%	31.3
30%	31.8
40%	32.3
50%	32.7
60%	33.1
70%	33.5
80%	34.1
90%	34.9

- # Pts = 24
- # Pts above Stoll = 6
- # Pts Break-Open = 2
- # Pts always >STOLL = 4
- # Pts always <STOLL = 17
- # Pts within 20% = 11
- # Pts in mix zone = 3

Determination of Heat Attenuation Factor



HAF = 79.1 %

Confidence Intervals
95% CI = 68.4 , 89.9

- Data pts
- Best Fit
- 95% CI
- 95% CI pts

ASTM F1959/F1959M-06ae1
Standard Test Method for Determining the Arc Rating of Materials for



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Fabric Description: Indura Ultrasoft Style 451, 9.0 oz/yd² 88% Cotton/12% Nylon, Navy, Laundered weight 9.8 oz/yd² over DRIFIRE Style 69265-1000005FHO, 8.61 oz/yd² Comfort Mesh, 85% Protex M (Modacrylic), 15% Tencel (Viscose), HV Orange, Laundered weight 9.5 oz/yd²

Test #	Panel	Cycles # (60Hz)	Ei cal/cm ²	SCD cal/cm ²	HAF %	Burn yes/no	Break Open Y/N	After Flame sec.	Omit Y/N	Comment	Ignition T-shirt
1	09-1862	A	18.1	13.18	-0.84	84.7	No	-	-	No	
2	09-1862	B	18.1	12.79	-0.55	81.9	No	-	-	No	
3	09-1862	C	18.1	17.22	-0.47	87.3	No	-	-	No	
4	09-1861	A	20.1	15.8			No	-	-	No	
5	09-1861	B	20.1	15.9			No	-	-	No	
6	09-1861	C	20.1	15.3			No	-	-	No	
7	09-1863	A	23.1	18.93	-0.64	89.5	No	-	-	No	
8	09-1863	B	23.1	18.07	-0.42	87.9	No	-	-	No	
9	09-1863	C	23.1	16.71	-0.13	84.7	No	-	-	No	
10	09-1864	A	40.1	28.56	-0.30	92.4	No	-	-	No	Ablation
11	09-1864	B	40.1	32.93	0.24	92.1	Yes	-	-	No	Ablation
12	09-1864	C	40.1	31.90	-0.27	93.6	No	-	-	No	Ablation
13	09-1865	A	45.1	33.60	-0.47	93.9	No	-	-	No	Ablation
14	09-1865	B	45.1	37.15	0.65	92.0	Yes	-	-	No	Ablation
15	09-1865	C	45.1	32.47	0.48	91.5	Yes	-	-	No	Ablation
16	09-1866	A	50.1	36.48	1.54	89.5	Yes	Y	-	No	Ablation
17	09-1866	B	50.1	37.64	1.39	90.3	Yes	Y	-	No	Ablation
18	09-1866	C	50.1	36.49	1.09	90.7	Yes	-	-	No	Ablation
19	09-1867	A	36.1	25.31	-0.78	94.8	No	-	-	No	Ablation
20	09-1867	B	36.1	27.59	-0.63	94.1	No	-	-	No	Ablation
21	09-1867	C	36.1	27.56	-0.83	94.3	No	-	-	No	Ablation
22	09-1868	A	28.1	21.99	-0.46	90.1	No	-	-	No	Ablation
23	09-1868	B	28.1	22.04	-0.48	90.5	No	-	-	No	Ablation
24	09-1868	C	28.1	23.92	-0.69	93.5	No	-	-	No	Ablation
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