
CAN/ULC-S109 Flame Resistance Testing of "SUNBLOCK"

A Report To: **SAINT CLAIR TEXTILES**
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Submitted by: Element Fire Testing

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3 pages + Appendix

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1.0 ACCREDITATION

ISO/IEC 17025 for a defined Scope of Testing by the American Association for Laboratory Accreditation (A2LA)

2.0 SPECIFICATIONS OF ORDER

Determine flame resistance in accordance with CAN/ULC-S109-14-R2019 Small-Flame and Large-Flame Tests, as per Saint Clair Textiles reference Purchase OrderNo. 800559 and Element Quotation No. 22-002-357558 dated Ma

2.1 History of Report Revision

This is the original.

3.0 SAMPLE IDENTIFICATION (Element sample identification number 22-002-S0311)

Reinforced fabric material described as, "PE textile coated with PVC", and identified as: "SUNBLOCK"

4.0 TEST RESULTS

4.1

CAN/ULC-S109-14-R2019 Small-Flame Test

Standard Methods of Tests for Flame-Resistant Textiles and Films

SAMPLE: "SUNBLOCK"

Test Specimen	Damaged Length (mm)	Afterflame Time (s)	Flaming Dripping (s)	Result
Long Direction 1:	72	0.0	0.0	Pass
" 2:	48	0.0	0.0	Pass
" 3:	53	0.0	0.0	Pass
" 4:	64	0.0	0.0	Pass
" 5:	55	0.0	0.0	Pass
Cross Direction 6:	55	0.0	0.0	Pass
" 7:	60	0.0	0.0	Pass
" 8:	43	0.0	0.0	Pass
" 9:	50	0.0	0.0	Pass
" 10:	68	0.0	0.0	Pass
Average:	57	0.0	-	Pass
Maximum Specified Average:	165	-	-	-
Maximum Specified Individual:	190	-	2.0	-

4.1.1 Test Notes and Observations

Specimens were supplied at appropriate dimensions and quantity for testing and were tested "as-received"
 Measured Fabric Weight: 889 g/m²

4.2 CAN/ULC-S109-14-R2019 Large-Flame Test
 Standard Methods of Tests for Flame-Resistant Textiles and Films

SAMPLE: "SUNBLOCK"

Test Specimen	Damaged Length (mm)	Afterflame (s)	Time	Flaming Dripping (s)	Result
Long Direction 1:	110	0.0		0.0	Pass
" 2:	125	0.0		0.0	Pass
" 3:	138	0.0		0.0	Pass
" 4:	130	0.0		0.0	Pass
" 5:	145	0.0		0.0	Pass
Cross Direction 6:	157	0.0		0.0	Pass
" 7:	150	0.0		0.0	Pass
" 8:	148	0.0		0.0	Pass
" 9:	155	0.0		0.0	Pass
" 10:	145	0.0		0.0	Pass
Maximum Specified Individual:	250	-		2.0	-

4.2.1 Test Notes and Observations

Specimens were supplied at appropriate dimensions and quantity for testing, were tested "as-received" and in flat sheet configuration.

Measured Fabric Weight: 889 g/m²

5.0 CONCLUSIONS

When tested "as-received", the material identified in this report meets the flame resistance requirements of CAN/ULC-S109-14.



Robert A. Carleton,
 Technician.



Ian Smith,
 Technical Manager.

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A.0 APPENDIX - SUMMARIES OF TEST PROCEDURES

A.1 CAN/ULC-S109 Small-Flame Test

10 specimens, each 70 mm x 250 mm are cut, with 5 in the warp (machine) direction and 5 in the weft (cross) direction, where applicable. The specimens are conditioned for 30 minutes at 105°C, or if they melt or distort at these temperatures, they are conditioned at 18 to 22°C and 50% R.H. for at least 12 hours, or by drying in an oven for 1 hour at 60°C.

Each specimen is removed from the conditioning chamber individually, clamped in a U-shaped metal holder and suspended in a specified cabinet. The free edge of the specimen is positioned 20 mm above the tip of a gas burner which has been adjusted to yield a flame height of 40 mm. Flame exposure time is 12 seconds. Char length and afterflame time are measured.

A.1.1 Flame Resistance Requirements (Reference: Clause 6.2)

Maximum Average Damaged Length or Destroyed Material (10 specimens)	Maximum Damaged Length or Destroyed Material for any Individual Specimen	Maximum Flaming Time for Residue on Floor of Tester
165 mm	190 mm	2.0 seconds

A.2 CAN/ULC-S109 Large-Flame Test

If the material can be hung in natural folds, four specimens, each 625 mm wide x 750 mm long are cut, with two in the warp (machine) direction and two in the weft (cross) direction, where applicable. If the material cannot be folded, or otherwise does not meet the criteria to be tested in folds, then ten specimens, each 125 x 750 mm are cut, with five in the warp (machine) direction and five in the weft (cross) direction.

Specimens are conditioned at 105 ± 2°C for 30 minutes or, if distortion or melting occurs at these temperatures, then they are conditioned at 20 ± 2°C, and at 25 - 50% relative humidity for at least 12 hours, or by drying in an oven for one hour at 60°C.

The specimens are removed from the conditioning chamber and suspended in the test apparatus, which is comprised of a 310 mm square by 2130 mm high steel stack. The stack is open at the top and bottom and is supported 300 mm above the floor. For conducting flame tests on fabrics hung in folds, each specimen is folded longitudinally to form four folds. For conducting flame tests on flat sheets, each specimen is hung so that the widest surface faces the test flame.

In either configuration, the lower edge of the specimen is positioned 100 mm above the top of a gas burner which is inclined at 25° to the vertical. The burner, which has been adjusted to yield a flame 280 mm in height is ignited and inserted directly beneath the specimen for a period of 2 minutes. Char length is measured from the tip of the flame, upwards.

A.2.1 Flame Resistance Requirements (Reference Clause 6.3):

	Maximum Char Length or Damaged Material Length (mm)	Maximum Flaming Time for Residue on Floor of Tester (s)
Folded	635	2.0
Single sheets	250	2.0

Flame-resistant fabrics and films shall comply with the performance requirements of both the Small-Flame and the Large-Flame Test.