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**CAN/ULC-S109 Flame Resistance
of "Someo" 100% Polyester Fabric**

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Standard Methods of Tests for Flame-Resistant Textiles and Films

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 - 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.

Flame Resistance Requirements:

| | |
|---|---|
| Maximum Average Length of Char or Destroyed Material for <u>Ten Specimens</u> 165 mm | Maximum Length of Char or Destroyed Material for any <u>Individual Specimen</u> 190 mm |
|---|---|

The specified maximum flaming time for residue on the floor of the tester from any individual specimen is 2.0 seconds.

Large-Flame Test

If the material can be hung in natural folds, 4 specimens, each 625 mm wide x 750 mm long are cut, with 2 in the warp (machine) direction and 2 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 10 specimens, each 125 x 750 mm are cut, with 5 in the warp (machine) direction and 5 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 1 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 both configurations, 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 2 minutes. Char length is measured from the tip of the flame, upwards.

Flame Resistance Requirements:

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

Note: As stated in the standard, "fabrics shall comply with both the Small-Flame *and* the Large-Flame Test".