

FLAME TESTING OF SCENIC ELEMENTS



Warning! Treatment with a fire retardant product will provide resistance to open flame but will not render the material fireproof.



Conduct a field flame test **only** if a good's fire retardant documentation not available. It is a last resort to test for fire retardation.



1. LEGAL REQUIREMENTS:

Fire Code Section 2.3.2.1 Drapes, Curtains, and Decorative Materials:

Drapes, curtains and other decorative materials including textiles and films used in buildings must meet the requirements of **CAN/ULC-S109 Standard for Flame Tests of Flame-Resistant Fabrics and Films**.

Materials that are not inherently flame proof or that do not meet the standard for flame resistance must be treated with an approved flame retardant.

Fire Code Section 2.3.2.2 Flame Retardant Treatments:

Flame retardant treatments must be renewed as often as required to ensure that the materials will pass the match flame test in **NFPA 701 Standard Methods of Fire Tests for Flame-Resistant Textiles and Films**.

2. BEST PRACTICE:

There are many flame retardant products available that allow you to treat the scenic products yourself.

However, if the local fire authority insists on a certificate of flame proofing, the work must be performed by a commercial contractor.

Large items, such as stage draperies, should be treated and certified by a commercial contractor.

The fire resistance value of treated materials is reduced by handling, washing, or painting the material.

Test permanently installed goods annually, **document** the results, and keep a **log** book

★ **To test a sample:**

- Use a sample that measures at least 6cm x 12cm.
- Take the sample from an inconspicuous piece of the scenic element that has been treated.
- Compare this sample against one that is non-treated.

To view the Acts safe video on how to conduct a field flame test, visit this [link](#).

3. THE BURN TEST:

The following guidelines are excerpted from the National Fire Protection Association (NFPA) and outline how to determine if a scenic element meets the standards for flame resistance.

NFP 705: recommended practice for a field flame test for textiles and films (www.nfpa.org).

1.2.1 The purpose of this recommended practice is to provide authorities having jurisdiction with a field means of determining the tendency of textiles and films to sustain burning subsequent to the application of a relatively small, open flame.

1.3.1.1 The field test method may be useful to regulatory officials as an indicator of whether a material being used or installed burns very easily or may be flame resistant as indicated by the following:

- Cessation of burning when the igniting flame is removed.
- Failure to burn at all.
- Continuing to burn non-aggressively after the igniting flame is removed.

The field test method has utility only when the authority having jurisdiction has no reliable data and, therefore, is forced to rely solely on the field test findings.

4.1.1 Materials: Specimens should be samples removed from the existing material.

4.1.2 Specimens should be dry and should be a minimum of 12.7 mm × 101.6 mm (1/2 in. × 4 in.).

4.2 Open Flame: The fire exposure should be from a common wood kitchen match or source with equivalent flame properties.

4.2.1 The flame should be applied for 12 seconds.

4.3.1 Method: The test should be performed in a draft-free and safe location free of other combustibles.

4.3.2 The sample should be suspended (preferably by means of a spring clip, tongs, or similar device) with the long axis vertical, the flame supplied to the center of the bottom edge, and the bottom edge 1/2 in. (12.7 mm) above the bottom of the flame.

4.3.3 After 12 seconds of exposure, the match is to be removed gently away from the sample.

4.4 Requirements: During the exposure, flaming should not spread over the complete length of the sample or in excess of 4 in. (101.6 mm) from the bottom of the sample (for larger size samples).

4.4.1 There should be no more than 2 seconds of after-flame

4.4.2 Materials that break or drip flaming particles should be rejected if the materials continue to burn after they reach the floor.

- 5.1 Limitations: The deficiencies and limitations of the field test method can lead to misleading or erroneous results, and the error can be in both directions. It is quite possible to have a too-small sample show several seconds of after-flaming, causing the material to be rejected. It is equally possible for improper or inadequate field procedures to indicate satisfactory flame resistance. This can result in dangerous errors.
 - 5.2 Precautions: Field procedures are useful, but they must be used with good judgment and their limitations should be recognized. Field tests should not be relied on as the sole means for ensuring adequate flame resistance of decorative materials, but they are useful in augmenting a comprehensive regulatory program adequate flame resistance of decorative materials, but they are useful in augmenting a comprehensive regulatory program.
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