

**EVALUATION OF AUTOMOTIVE TRIM MATERIALS TO  
SUNLIGHT DEGRADATION**

**Application**

This procedure is used to determine the effects of ultraviolet radiation and degradation of fabrics after Fade-Ometer and field exposure.

**Apparatus Required**

**Fade-Ometer**

Atlas or equivalent.

**Tensile Testing Machine**

Instron Model 7M or equivalent constant rate of extension type tensile tester.

**Conditioning and Test Conditions**

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

**Procedure**

1. Measure and cut two samples 4 by 10 inches, one with the long dimension in the warp direction and one in the fill direction. These are to be exposed in the Fade-Ometer. Cut four samples 3 by 5 inches (two warps and two fills). These are to be used for original tensile strength values.
2. Clamp each end of the 4 by 10 inch specimens to the revolving frame of the Fade-Ometer so that the fabric is in a vertical position.
3. Expose the fabrics in a Fade-Ometer for 200 standard fade hours under the operating conditions described in SAE J 1885.
4. After exposure, measure and cut the samples 3 by 5 inches (two samples from each test specimen).

| Date       | Action  | Revisions                                  |
|------------|---------|--------------------------------------------|
|            |         |                                            |
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5. Test the tensile strength of the original and exposed samples as follows:
  - (a) Insert test specimen in a constant rate of extension type of tensile machine having an initial jaw separation of 1 1/2 inches. The face of one jaw of each clamp shall be 1 by 1 inch; the other of each clamp shall be 1 by 3 inches with the long dimension perpendicular to the direction of application of the load. Crosshead speed shall be 5 inches/minute.
  - (b) Compute the average tensile strength in each direction.

6. Calculate the percent retained tensile as follows:

$$\% \text{ Retained Tensile} = \frac{\text{Aged Tensile}}{\text{Original Tensile}} \times 100$$

**Florida Field Exposure Test**

1. Prepare 4 by 10 inch samples as outlined in para 1 and expose at South Florida Test Service, Miami, Florida, or equivalent exposure station for 21,000 Langleys under glass in accordance with AATCC 16B-1964T.
2. After exposure, prepare and test as outlined in para 4, 5 and 6.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.