Ford Motor Company

# FORD LABORATORY TEST METHOD BN 105-03

## DIMENSIONAL STABILITY OF TEXTILE TRIM MATERIALS

### Application

This method is used to determine the dimensional changes of textile trim materials under the influence of heat and humidity.

### Apparatus Required

**Mechanical Convection Oven**

Capable of maintaining any specified temperature between 80 and 100 °C +/- 2 °C.

**Humidity Cabinet**

Capable of maintaining a constant temperature of 38 +/- 2 °C and a relative humidity of 98 +/- 2%.

**Scale or Ruler**

With 0.5 mm divisions.

### 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 hours prior to testing and tested under the same conditions unless otherwise specified.

### Procedure

1. The test specimen should be approximately 250 x 250 mm in size. Using a pen or sharp pencil on the finished side (i.e., "appearance" side) draw a 200 mm long line approximately 30 mm in from each edge. Mark the two horizontal lines X1 and X2 and the two vertical lines Y1 and Y2. Materials with a rough surface such as carpet may be marked on the opposite side.

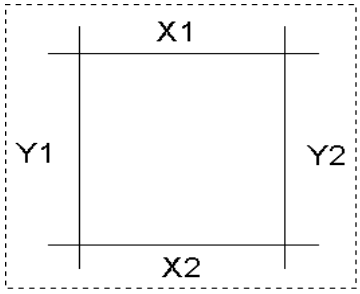
| Date | Action | Revisions | |
|---|---|---|---|
| 2002 11 22 | Revised | Rev. Procedures paragraph | A. Wedepohl |
| 2001 09 11 | Revised | Editorial – no technical change | A. Cockman |
| 1990 05 18 | | | |



Documents
Document Sharing Hub

Copyright Ford Motor Company
Provided by IHS Markit under license with FORD
No reproduction or networking permitted without license from IHS
Full document details: FORD FLTM BN 105-03 2002

Copyright © 2002, Ford Global Technologies, Inc.
Licensee=, User=,
Not for Resale,




2. Condition the test specimen for 24 hours in the humidity cabinet at 38 +/- 2 °C and a relative humidity of 98 +/- 2%.

3. Remove and immediately measure all four lines and report the average percent change for the X and Y directions. Calculate the percent change as follows:

$$\% \text{ change in X direction} = [(X1_1 - 200mm)/200mm + (X2_1 - 200mm)/200mm] / 2$$

$X1_1$ = new measured length of line X1
$X2_1$ = new measured length of line X2

4. Then condition the test specimen for 24 hours in a convection oven at 80 +/- 2 °C or at the temperature specified by the Material Engineering Specification.

5. Remove and immediately measure all four lines and report the changes as in step 3.

6. Repeat steps 2 - 5 as often as required by the number of cycles specified in the relevant Material Engineering Specification. Dimensional changes shall always be calculated from the initial 200mm line length.

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.



Documents
Document Sharing Hub

Copyright Ford Motor Company
Provided by IHS Markit under license with FORD
No reproduction or networking permitted without license from IHS
Full document details: FORD FLTM BN 105-03 2002

Copyright © 2002, Ford Global Technologies, Inc.
Licensee=/, User=,
Not for Resale,