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FORD LABORATORY TEST METHOD EU-BO 051-09

COLD FLEXIBILITY OF PLASTIC FILM AND SHEETING

Application

This procedure is used to determine the flexibility of plastic film and sheeting or similar materials when subjected to stress-flexure at low temperature.

Apparatus Required

Test Cabinet

This consists of a double walled plastic box with an interchangeable individual front plate containing six test slits with the same dimensions (see drawing). The width of the slits used shall be 4 to 5 times the thickness of the particular material under test.

Source: Messrs. Karl Frank GmbH
68 Mannhein/Rheinau
Edinger Riedweg 47-57, Germany

Mechanical Convection Oven

Capable of maintaining a constant temperature of 80 +/- 1 °C.

Cold Box

Capable of maintaining a constant temperature of - 40 +/- 2 °C. A box with a door opening at the top is preferred to minimise rapid changes in temperature while flexibility test is performed.

Gloves

Heavy cloth gloves for use in cold box.

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.

Date	Action	Revisions
2001 03 27	Revised	Editorial – no technical change A. Cockman
1994 02 28		

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Procedure

1. Place 6 test specimens, 15 x 200 mm, in the oven at 80 +/- 1 °C for 24 hours.

2. Remove specimens from the oven and condition for 2 hours at 23 +/- 2 °C and a relative humidity of 50 +/- 5 %.

3. Fold each specimen back upon itself and mount in the test slits as shown in sketch. The radius of the loop formed shall be 4 to 5 times the width of the split. Only one specimen must be mounted per slit. (Specimens must only be mounted in alternate slits of the test cabinet front plate).

4. Place the test cabinet, with the mounted specimens, and the cloth gloves in the cold box for 24 hours at - 40 +/- 2 °C unless otherwise specified by the relevant engineering specification.

5. At the end of 24 hours open the cold box door, put on the gloves, hold both ends of the specimen together and pull the loop through the test slit as quickly as possible.

6. Remove the specimens from the cold box and allow them to attain room temperature.

   Note: It is recommended, in view of possible fluctuations in temperature in the oven and cold box, that temperatures be recorded in the immediate vicinity of the test specimen.

Evaluation

Examine the loop of the specimen, with the unaided eye, for evidence of cracks or other failure.

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