Ford Motor Company

FORD LABORATORY TEST METHOD EU-BO 051-04

DETERMINATION OF IMPACT RESILIENCE

Application

This procedure is used to determine the impact resilience of elastomers e.g., rubber and polyurethane.

Apparatus Required

Schob System Impact Pendulum (see drawing)

With:	Potential Energy of Pendulum	0.5 Nm +/- 0.01 Nm
	Impact Speed of Pendulum	2 m/sec + 0.3 m/sec - 0.04 m/sec
	Loss of Energy by Friction of Pendulum	2 % maximum
	Height of Impact Point of Pendulum Above the Centre of the Specimen	0 mm +/- 4 mm

Source:

W. Wykeham & Co. and Fa Zwick & Co.
Aeon Laboratories 7901 Einsingen
Englefield Green, Surrey, England Ulmer Weg 22, Germany

Micrometer

With +/- 0.05 mm accuracy.

Cutting Die

36 +/- 0.1 mm diameter.

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. Die cut 3 specimens from slab stock with a thickness of 6 +/- 1 mm.

2. Measure the thickness of the specimens, and note to the nearest 0.1 mm.

3. Mount the specimen on the anvil of the test apparatus, so that the hammer peen of the pendulum just touches the specimen when in the free perpendicular position.

4. Allow the pendulum to fall 6 times from the horizontal position onto the same point of the specimen.

5. Record the percent rebound resilience of the 4th, 5th and 6th stroke.

Evaluation

Calculate the average of the results for the 4th, 5th and 6th strokes.

Multiply the average obtained with the following correction factor.

$$C.F. = \frac{11\ mm}{a + 5\ mm}$$

Where: a = average thickness of the specimen.

Note: If it is impossible to obtain the required specimen thickness (5 - 7 mm) do not use the above correction factor. In such instances the impact resilience must be reported together with the specimen thickness.

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.

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